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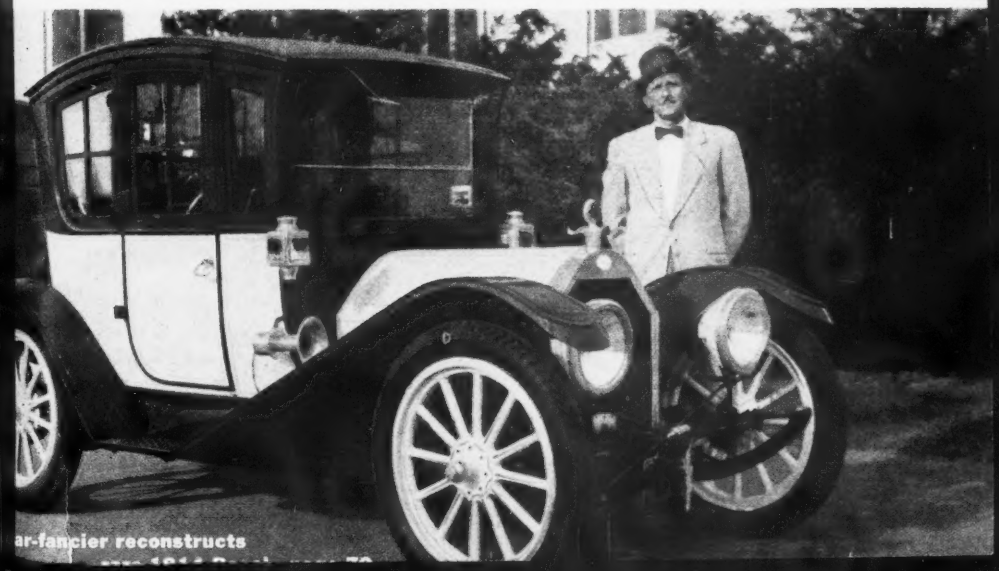
Father and son design
140-mph sports car—page 82

W TO GET RICH PROSPECTING FOR NATURAL GAS

UILD MI'S VACATION HOME FOR UNDER $2,500



ar-fancier reconstructs

$15.20 an hour!

This is the average earning reported by Presto salesman WILLIAM F. WYDALLIS. "The sky's the limit" on Presto profits because of America's serious need for this new fire extinguishing discovery.

WILLIAM F. WYDALLIS

"Most specialty salesmen are always on the lookout for a 'natural.' The 'natural' of this decade is the PRESTO FIRE EXTINGUISHER . . . because it is handy in size, simple to operate, and in the right price range.

"For every hour I have devoted to the Presto, I find that I have earned an average of $15.20 an hour. I am now convinced that extraordinary money can be made in this safety field. I am devoting more of my time to this product now since I have discovered that the earnings on this item are greater than any item I have handled in the past."

—*William F. Wydallis*
Van Wert, Ohio

CHARLES KAMA

This Presto salesman from Texas was featured as "Salesman of the Month" on the front cover of a sales magazine. He told the magazine's reporter:

"I think I've succeeded pretty well. I'm making more than a thousand dollars a month—and I haven't touched bottom yet."

WOULDN'T YOU like to be making the kind of money William F. Wydallis is making? His story (printed at left) is just one example of the brilliant success that Presto salesmen are meeting everywhere! A Florida salesman earned $600 in one month. An Ohio man earned $2100 in 2 months. A New York salesman earned $1500 in one month. A New Hampshire salesman added the Presto as a *sideline* and picked up an extra $1800 in 20 months.

Folks Are Amazed when you Tell Them This New Kind of Protection Costs Only $3.98

Over One Million Already Sold!

PRESTO contains an amazing new chemical "Chlorobromomethane" or "C.B." developed as a secret defense against fire during the war.

In comparing the effectiveness of "C.B." in fighting various kinds of fires an authoritative testing laboratory states: "It has been proved that *'C.B.' is about 1.5 to 6 times as effective as other common extinguishing agents on an equal weight basis."*

This extra effectiveness of "C.B." means that Presto can be made light and handy enough for even a woman or child to use. Just a twist of the knob . . . and flames disappear! "Sells on sight" to civil defense workers, owners of homes, cars, stores, farms, service stations, boats, motorcycles, factories, offices and to stores for re-sale.

Why Large Presto Profits Are So Easy

Everyone is terrified at the very *thought* of *FIRE! Every year* fire kills more than 11,000 people. Most people who see Presto in action want one or more—ESPECIALLY WHEN THE PRICE IS ONLY $3.98 EACH!

You can demonstrate Presto in a few minutes, and every sale will net you $1 or more. We refill your demonstrator free . . . and we give you dramatically powerful printed sales material to "talk from" . . . free certificates testifying that Presto is GUARANTEED FOR 20 YEARS.

YOU DON'T NEED TO INVEST A PENNY. Just collect and *keep* $1 or more every time you write an order—we collect the balance and deliver the extinguisher. (Or if you *wish*, you can buy from us at extra-low wholesale prices and then make up to $2.18 profit per unit supplying both dealers and retail customers—we'll send you free details.)

Only Presto Has All These Features!

- **Ends Fire as Fast as 2 Seconds**
- **Chemical Contents 1.5 to 6 Times More Effective Than Others on an Equal Weight Basis**
- **Weighs Less Than 1 Lb.**
- **Easily Held in One Hand Even by a Child**
- **Needs No Inspection or Recharging—Does Not Corrode or Deteriorate**
- **Costs Only $3.98—Yet Only Performs Bulky Extinguishers Costing Several Times as Much**
- **Automatic Pressure—No Pumping**
- **Guaranteed for 20 Years—Certificate is Packed with Every Presto**

Start Now—Mail Coupon

Get started in this rich new field now. Don't "put it off"! Every day you hesitate may cost you $10, $15, or even $50 you could otherwise be making. Mail the coupon at right NOW for everything you need to get started right away!

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Inc., Dept. 109, 201 East 16th Street, New York 3, N.Y.

Best Selling Months Just Ahead! Don't Delay—Mail Coupon Now!

MERLITE INDUSTRIES, Inc., Dept. 109, 201 East 16th Street, New York 3, N. Y.

Please send me illustrated sales literature, liberal profit plan, order blanks—everything I need to get started making good money introducing the Presto Fire Extinguisher in my locality.

☐ **CHECK HERE IF YOU WISH TO ORDER A REGULAR PRESTO TO BE USED AS A DEMONSTRATOR ($2.50).** Pays for itself many times over in increased sales. Can be returned as often as you like for FREE re-fill. You needn't enclose any money now—we'll send Demonstrator C.O.D. (Or if you wish to save money, enclose $2.50 and we'll pay postage.)

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Tired of the same old job?

Sure, you are. Anybody gets tired of standing still in the same place. But don't get the idea that just quitting your present job and going somewhere else will take you out of the rut.

The trouble may be *inside yourself*. You're restless because you want to get ahead — make more money — do more interesting work. All right — why not?

Look around you. The men who are advancing are the *trained* men. They've learned special skills that bring them higher pay. It's the men *without* training who stick in the same old job.

What are you going to do about it? Just wait and hope for something better to come along? If you really *want to succeed*, you can get the necessary training by studying at home in your spare time. International Correspondence Schools offer you a course in practically any field you choose, giving you the practical plus the bedrock facts and theory. You'll earn while you learn. Students report better jobs and more pay within a few months.

Read carefully the list of subjects in the coupon below. Pick out the field of study that interests you most — the one with the greatest future for you. Then mark and mail the coupon, and *find out* what I. C. S. can do for you. All it costs is a stamp or postcard, yet it may be the most important step you've ever taken!

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machine operator to shop foreman

"When I enrolled for my I. C. S. course in Carpentry and Millwork, I was a machine operator. Today, eleven months later, I am a shop foreman. As a consequence my salary has been increased 73.3%."

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VOLUME 47 NUMBER 5

A FAWCETT PUBLICATION

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MECHANIX ILLUSTRATED is published monthly by Fawcett Publications, Inc., Fawcett Building, Fawcett Place, Greenwich, Conn. Printed in U.S.A. Editorial offices: 67 W. 44th St., New York 36, N. Y. Advertising offices: New York 36, 67 W. 44th St., Detroit 26, 1659 Guardian Building; Chicago 11, 612 N. Michigan Ave.; Los Angeles 17, 643 S. Flower St.; San Francisco 4, 111 Sutter St. General Offices, Fawcett Building, Fawcett Place, Greenwich, Conn. Shepard Spink, Advertising Director; Roscoe K. Fawcett, Circulation Director; Gordon Fawcett, Treasurer; Allan M. Adams, Secretary; Al Allard, Art Director. Entered as second-class matter at the post office at Greenwich, Conn., under the act of March 3, 1879. Additional entry at Louisville, Ky. Copyright 1952 by Fawcett Publications, Inc. Reprinting in whole or in part forbidden except by permission of the publishers. Title registered in the U. S. Patent Office. Address manuscripts to MECHANIX ILLUSTRATED, 67 West 44th St., New York 36, N. Y. All remittances and correspondence concerning subscriptions as well as notification of change of address should be addressed to Circulation Department, Fawcett Building, Fawcett Place, Greenwich, Conn. Not responsible for lost manuscripts or photos. Unacceptable contributions will be returned, if accompanied by sufficient first class postage. Price 15c a copy. Subscriptions $1.80 per year in the United States and Possessions. 20c per copy in Canada and other foreign countries and in certain specified geographical areas of the U. S., subscriptions $2.40 per year in Canada and Pan America. Other foreign countries $3.15 per year. Foreign subscriptions and sales should be remitted by International money order in U. S. Funds payable at Greenwich, Conn. Advertising forms close fifth of second month preceding date of issue.

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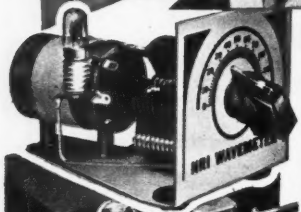

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As part of either my Communications Course or my Servicing Course I send you many kits of parts that give you PRACTICAL EXPERIENCE. They "bring to life" the principles in my easy-to-understand, illustrated lessons. Shown at left is some of the equipment you build. Build valuable Multitester, use it to make many tests, earn extra money in spare time fixing neighbors' Radios. Build many circuits common to both Radio and Television. All equipment is yours to keep. Mail coupon for my FREE DOUBLE OFFER! My free 64-page book describes and pictures equipment I send.

Television Is Today's Good Job Maker

In 1951 over 15,000,000 homes had Television sets, more are being sold every day. Television now reaches from coast to coast. 108 TV stations are already operating, over 1800 more have been authorized. This means new jobs, more jobs, better pay for trained men. The time to act is NOW! Start learning Radio-Television servicing or communications.

Make Extra Money in Spare Time While Learning

Keep your job while training. Many NRI students make $5, $10 and more a week extra fixing neighbors' Radios in spare time. I start sending you special booklets that show you how to service sets the day you enroll. Multitester you build helps discover and correct Radio troubles, gives PRACTICAL EXPERIENCE on circuits common to Radio and TV.

I Trained these Men at Home

Laborer Finds Success in Radio-TV

I was a laborer with no future. Now I have a position that pays well. My spare time servicing pays good money, too. Thanks to NRI."—Robert Ford, Johnstown, Pa.

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"I recently switched from studio work and am now holding a position as TV service technician. Enjoy my work more and more." — Norman Ward, Ridgefield Park, N. J.

Paid for Course, Car in Spare Time

"By the time I graduated I had paid for my course, a car and testing equipment. I can handle any job in Radio-TV." — E. J. Streitenberger, New Boston, Ohio.

$10 to $15 Week Spare Time

"Four months after enrolling, was able to service Radios . . . averaged $10 to $15 a week spare time. Now have full time business." — W. Weyde, Brooklyn, N. Y.

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Service Manager
Tester
Research Assistant

SHIP AND HARBOR RADIO
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Radiotelephone Operator
Assistant Operator

GOVERNMENT RADIO
Operator in Army, Navy, Marine Corps
Airways Operator
Forestry Dispatcher

AVIATION RADIO
Transmitter Technician
Airport Transmitter Operator

TELEVISION
Pick-up Operator
Television Technician
Remote Control Operator
Service and Maintenance Technician

POLICE RADIO
Transmitter Operator
Receiver Serviceman

Control Operator, Station WEAN

"Received my License and worked on ships. Now with Station WEAN. NRI Course is as complete as any radio course can be." —Raymond E. Arnold, Rumford, L. I.

Lost Job, Now Has Own Shop

"Got laid off my machine shop job which was best thing that ever happened to me as I opened a full time RADIO shop." —Ernest T. Slate, Corsicana, Texas.

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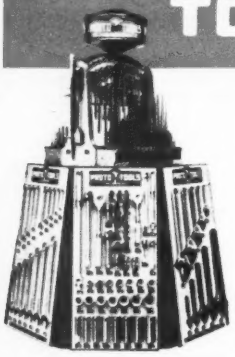

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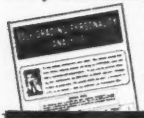

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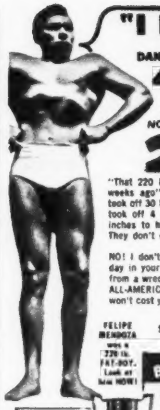

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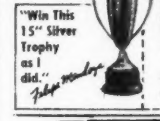

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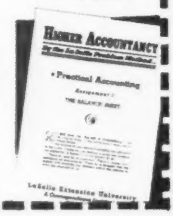

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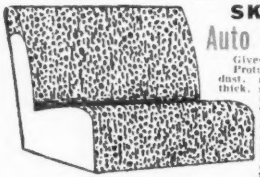

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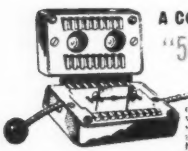

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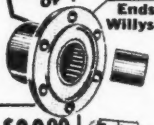

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Joe, official mascot of Cunningham's U.S.A. race team at Le Mans, poses for the photogs. For more details of Joe's adventures in France, read below.

This, That and The Other

Some people are born liars, some people are acquired liars, and some people have liardom thrust upon 'em. Of the last class am I. In this very space last month I told you that Old Mosstop McCahill was going to go slaloming over the Alps in a Sunbeam-Talbot, with champion sports car driver John Fitch, in the 2,000-mile Alpine Rally. Well, I'm a liar. He didn't go. Personal business which required his avuncular presence in the Newnited States earlier than he had planned, forced Uncle McCue Ball to cancel his entry and return home without having had a chance to scare the mountain goats out of their skins. Ah, my, that's how editors get ulcers (*Get* 'em? Got 'em!) . . . Anyway, Joe the Labrador McCahill had his share of *le sport,* chasing French poodles and leaving his autograph on fire plugs from Paris to the Mediterranean. American restaurant proprietors are kind of stuffy about letting you bring your pooch into their ptomaine traps. Not the French, who gave Joe the big welcome. Even brought out a special chair for him so he could sit up at the table with Papa Tom and Maman Cynthia. . . Joe was also the official mascot of the Cunningham race team which finished fourth in the big Le Mans 24-hour grind (see snapshot above and Tom's comments on the race in the Nash Ambassador test piece on pages 78-81). That snappy sweater he is sporting is striped in the official blue-and-white racing colors of the Cunningham team. *Tres chic, n'est-ce pas?* . . . As I write this, Joe is about to take off for home on the Queen Mary. In stateroom K-9, no doubt. It costs a hundred bucks to take a dog to Europe on the Queen. That's a lot of hamburger . . . Speaking of cars, I invite your gaze to the front cover of this here magazine and to the layout of pictures on pages 70-71, showing the 1914 Regal Underslung Colonial Coupe which Tony Koveleski brought back from the grave. I have ridden in this cutie and she is a real doll. Tony practically breaks down and does a Johnny Ray every time he mentions the Regal, he's so happy with his "little princess." A beauty, from her mahogany window muntins (look that one up, Jack!) to the real-leather-padded jump seat that folds down from under the dashboard. If you push the Regal hard she'll shudder along at a nippy 30 mph—but who wants a girl who can run fast? The Regal is one for the book and (y)our book, good old MI, is the first ever to publish pictures of this most rare and valuable automobubble. Next to his 1914 Stutz Bearcat (September 1951 MI), Tony prizes this car the most among his whole collection of antique jobs, of which he has about 20. Incidentally, he's the guy who owns and operates Hudson Old Timers, makers of those wonderfully accurate scale models of antique automobiles you can buy in kit form. These models are so good that the National Museum in Washington displays the whole collection. A kit of the Regal is the newest addition to the line. . .

Getting away from cars for the nonce, if you've ever dreamed of building yourself a hunting lodge that has everything, withal at low cost, be sure to read MI's Vacation Home article beginning on page 98 of this issue. This is *it*, fellow dreamers.

Until next month.—*Bill Parker.*

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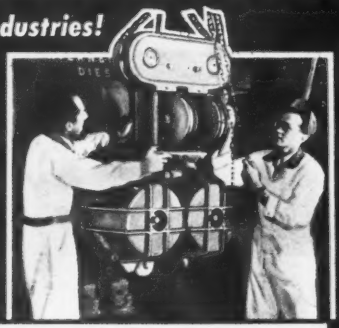

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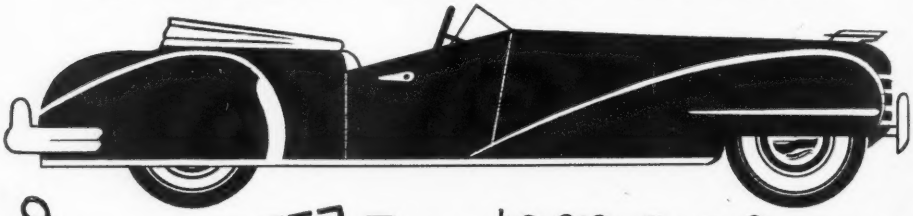

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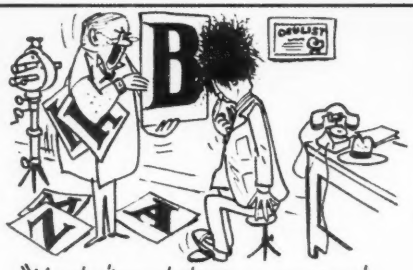

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THE rather commonplace flashlight is probably the most useful and valuable gadget in existence, next to the pen and pencil. Hundreds of tasks could not be performed properly or as well without it. Many lives would have been lost were it not for it.

Contributing to its wide use are its slight expense, simplicity of design and multitude of stylings. Modifications permit its use in the home, in medicine, in outdoor displays, in business, etc.

Although the flashlight has been with us for many years, it is far from perfect. Probably no person has used one without wishing for something better. While shape and size of the modern units have generally been accepted as satisfactory, the average person finds that the flashlight does not give the best possible performance. The light is not good enough particularly during the partial daylight of early morning and dusk. The beam never seems to shine just where it is needed. Take the simple operation of changing a tire. One hand is useless because it is needed to hold the flashlight. You cannot seem to set the lamp securely so that it will throw light where it will do the most good.

As you study the problem further you will discover many other difficulties. Battery life is too short. There is much loss of energy in "shelf life." This applies whether the cells are deteriorating on the shelf of the dealer or while they are in your metal or plastic case.

There also is the problem of corrosion of the walls of the cells to such an extent that they ruin the flashlight case. Although the chemical process has been encased in a strong external shell during recent years, the chemical change has not been stopped.

There is a considerable loss of brilliance of light as the battery runs down. No simple system has been devised to tell when this is about to happen.

While the filaments of the bulbs and mounting of the lamps have been improved, accidental dropping of the flashlight almost always wrecks the lamp. Some flashlights contain a place for a spare bulb which most users never purchase.

The threaded fittings at the top and bottom of the case often become damaged. Screwing the ends to the shell is not foolproof. There is no reason, for example, why cells or lamps could not be loaded as easily as a cartridge can be put into a modern rifle.

The mounting of the glass lens or plastic substitute leaves much to be desired. So do the switches and contacting electrical connections. Focusing is another matter which needs further study and improvement as does the surface of the reflector which tends to scratch and turn yellow.

These things are known both to the manufacturers and to many inventors. More than 2,000 patents on flashlights and improvements have been granted through the U. S. Patent Office. Most of these have long since expired and now are public property. This also applies to holdings of some of the large flashlight manufacturers who never marketed some of the items on which they held patents.

The inventor will find it almost impossible to sell a new flashlight design to a manufacturer. On the other hand, it is relatively easy to sell the public anything which will outperform others on the market. Hence the inventor must approach this problem from a very practical viewpoint. He should be in a position to both patent and produce the item, or he should have good assurance that the article will be financed through the manufacturing stage.

Patenting a new design is not an easy matter, either. The great number of patents devoted to this subject make even the search a job requiring a full week of work for an experienced searcher.

This does not imply that everything has

[*Continued on page* 20]

INVENTORS

Learn how to protect your invention. The U. S. Patent Laws provide that any new and useful art, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof, may be patented if the act of invention is involved. Therefore, every inventor with a valuable invention should take advantage of the Patent Laws and proceed for patent protection in order to safeguard his rights.

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Invention Clinic

[*Continued from page* 18]

been patented in this field. Someone will one day discover a unit, probably no larger than a pencil, into which a tablet can be dropped or which will be as refillable as the fountain pen. Chances are that it will give more light and be less likely to break. Don't scoff at this. The firefly does a mighty good job with little expenditure of energy.

If you have a good idea, the first thing to do is to make and test the model. Comparisons are easy. If your design covers the flashlight cell or lamp, reflector or lens, measure the light by life-test and the illumination by a grease spot photometer described in any high-school physics book.

On the other hand, if it is the mechanical feature which concerns you most, try to produce some sort of model which will be representative, then test this fully. Try to determine how this would fit into a production program.

In either of the cases, request your patent attorney to have the records searched to learn if you have something likely to be patentable.

Remember that improvements must be real, not merely imagined by you. For example, don't think that a bayonet joint is a patentable substitute for threads. Neither should you imagine that extreme simplicity will assure success.

A really simple flashlight was protected in

[*Continued on page* 22]

INVENTORS

Before you make any effort to market your invention, you should take the first steps toward proceeding for patent protection.

I shall be pleased to furnish you with information relative to patent procedure upon request from you, and this will be without any obligation on your part.

PATRICK D. BEAVERS
Registered Patent Attorney
923 Columbian Building Washington 1, D. C.

INVENTORS

Send for PATENT INFORMATION Book and INVENTOR'S RECORD without obligation

GUSTAVE MILLER
92MI Warner Building
Washington 4, D.C.

REGISTERED PATENT ATTORNEY
Patent Attorney & Adviser U.S. NAVY DEPT. 1930-1947
ASSOCIATE EXAMINER U. S. PAT. OFF. 1922-1929
PATENT LAWYER

INVENTORS

If you believe that you have an invention, you should find out how to protect it. The first step is to have a search made of the prior pertinent U. S. patents. If a report on this search indicates that the invention appears patentable you can apply for a patent, and the specifications and claims should be prepared.

The firm of McMorrow, Berman & Davidson, with offices in Washington, D. C., is qualified to take the necessary steps for you. We can make a preliminary search on your invention, advise you whether we think it can be patented, and prepare your application for patent.

Unless you are fully familiar with the U. S. Patent Laws, we recommend that you engage the services of a Registered Patent Attorney to protect your interests. The patent laws are *your* laws. A patent gives you the right to prevent others from making, using or selling the invention claimed in your patent for a period of 17 years.

Use these patent laws for your protection. Investigate whether your invention can be patented. If you have what you believe to be an invention, we suggest that you have this firm make a search for you.

Send for a copy of our Patent Booklet entitled "How To Protect Your Invention," containing information about patent protection and patent procedure. Along with this we will also send you an "Invention Record" form, for your use in writing down and sketching details of your invention. We will mail them promptly. No obligation. They are yours for the asking.

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Invention Clinic

[*Continued from page* 20]

1916. It was a wire loop which encircled the cell, had a twisted wire socket at one point and an incorporated switch diametrically opposite. Another job was a metal band made to fit under terminals of a standard cell. The band contained a switch and lamp fitting.

Many systems have been developed for putting the light where it is wanted. These cover such things as gooseneck fittings, swivel tops, mirror reflectors, coat button hanging stirrups, belt fasteners, folding legs, magnetic bases, clip or pin fasteners, removable lamp sections for attaching to headbands, and others. An early gooseneck, for example, was protected in 1917, a buttonhole lamp received a patent in 1918, two headband styles were protected at nearly the same time, one of them being assigned to a leading flashlight manufacturer.

Many flashlights have been patented specifically for use on the wrists. Some have automatic switches which depend on position of the arm. Others work by movement of the arm or of a single finger.

Better light is claimed in a 1922 issue which relates to the use of a parabolic reflector. Another adds an extra cell or two via a sectional case.

Storage batteries also appear in many patents. Two of these were assigned in 1924 to a leading flashlight manufacturer. They incorporated rectifiers or motor-driven charging devices so that they could be plugged into alternating current lines.

These few briefs should impress the inventor to be much on his guard about rushing to patent the first idea that comes along. Study what you propose most thoroughly. If it is really an improvement you will need to push it hard to get it started. Unless you have a lot of money to spend you will not get far with a minor change. •

Next Month: Garden Sprinklers.

INVENTORS

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CARL MILLER
REGISTERED PATENT ATTORNEY
WOOLWORTH BLDG., 35th FLOOR, 92B
NEW YORK CITY

INVENTORS

Whether an invention is patentable can be substantially determined by a search of the U. S. Patent records. Without obligation, write for information explaining the steps you should take to secure a patent.

JOHN N. RANDOLPH
Registered Patent Attorney
209 Columbian Building Washington 1, D. C.

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Dear Editor

Use this letters column as you see fit—make it a complaint box, question box, suggestion box or even a soap box. But use it! Our only requirement is that you sign your name and keep 'em short, interesting and clean. Address mail to: MECHANIX ILLUSTRATED, Letters Editor, 67 West 44th Street, New York 36, N. Y.

Shocking Problem

In your June 1952 issue there was a letter from a Wilbur Andrysont, of Eunice, La., about his "shocking problem" (Seeing a car drive along the road with nobody in the front seat, one man in the back seat.—Ed.)

I have seen pictures of a car that had the engine in the trunk. The compartment under the hood was fixed so the driver drove the car from under the hood! This may be the explanation to Mr. Andrysont's problem.

By the way, how old is Uncle Tom?

David Neal, Jr.
San Diego, Calif.

Old enough to know better than to drive a car from under the hood.

Streamline the Infantry?

In your June 1952 issue there was a story titled Why Don't We Streamline the Infantry? (Suggesting our troops use protective body armor and helmets made of very strong, very light laminated nylon.—Ed.) The soldiers in Korea are not dressed like that. Why not?

Judd Clemens
Watsontown, Pa.

Maybe the Department of Defense missed that issue of MI. Seriously, though, both the Army and the Marine Corps in Korea have been experimenting in actual battle with the same kind of nylon vests recommended by artist Frank Tinsley. At latest count, 18 men's lives have been saved—and medicos predict that widespread use of such body armor and helmets would reduce casualties by 75 per cent.

Logic

In your February 1952 issue you show how to take wide-angle photos without a wide-angle lens by taking three adjoining pictures. What would the photo look like if you took six pictures?

Duanne Lukan
Prince Albert,
Saskatchewan, Can.

Bigger.

Fires of Distinction

Would you please tell me a way of mixing a solution that would distinguish fires promptly?

Dennis Richard Duff
Duluth, Minn.

Water question!

Chevrolet a la Korea

Enclosed is a picture I snapped here in Korea. I wonder if you or any of the readers know what model Chevrolet this is? Or is it a Korean custom-built auto?

Cpl. Eugene Fetner
"With the Engineers
in Korea"

Looks like a Fordolet to us. Or maybe a Chevrolizzie. Anybody got any better ideas?

No Comment Department

Why don't they invent square cigarettes? They would be handier for packing.

Charles A. See, Jr.
Brownsville, Tex.

After reading those whacky letters that are sent into your column, I have come to the conclusion that everyone is crazy except me.

James Manahan
Kokomo, Ind.

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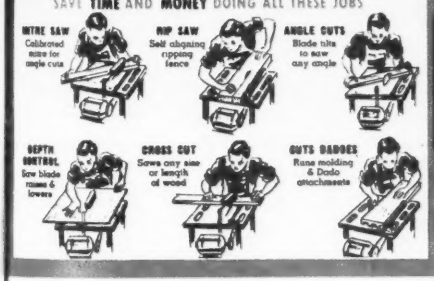

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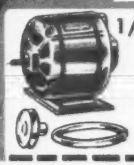

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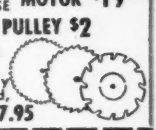

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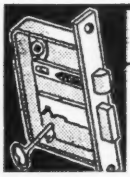

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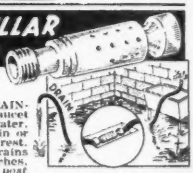

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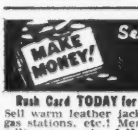

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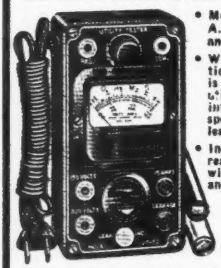

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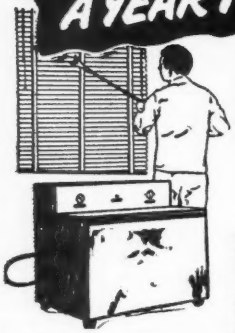

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650-16(6)	6.46	710-15	6.66	750-17	11.66	825-20	18.36
700-16	6.46	760-15	5.86	750-15	14.06	900-20	17.36
750-16	6.96	800-15	6.56	825-15	16.06	1000-20	17.86
525-18	5.96	820-15	6.56	600-20	8.86	1100-20	20.56
557-17	4.96	670-16	6.66	650-20	10.26	1200-20	23.76
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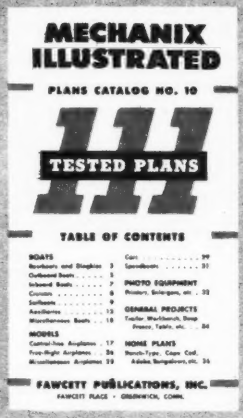

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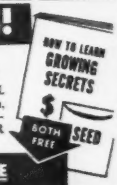

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No house-to-house canvassing. No face-to-face selling. We not only supply the equipment you need for the work, but also show you exactly how to cash in big daily profits from two big demand fields.

A FORTUNE IN PLASTIC SEALING

Millions of people want to protect valuable cards, photographs, documents and papers against wear, soil, and damage. By our MAGIC MAIL Plan you get this business through the mails. Open envelopes and take out money and orders. Details of this plan will amaze you. It will be sent free. Just mail coupon.

ENORMOUS PROFITS IN LAMINATING

A creative, artistic business. Gift shops sell your entire output. Just a few of thousands of giftwares illustrated on this page. Beautiful colors. Endless designs. Exclusive "one of a kind" appeal brings sales at ten to twenty times the cost of materials. Beautiful illustrations and instructions for making these artistic novelties sent free.

The opportunities in Plastic Laminating are so big that space here does not permit even skimming the surface. To get any idea at all of the size of these markets and your place in this sensational business you must read the details. See for yourself how easy it is to do the work—how you can put plastic sheets into your machine and take out a fortune—how money and orders come to you in the mail—how gift shops clamor to get more and more of your creations—how you can start with one machine and build up a big production plant with others doing the work—how you can get money and business from every State in the Union—how you can achieve independence without study or experience.

FREE

RUSH COUPON

Never before has such an opportunity been offered the small, home-operator—an opportunity to gain complete personal independence in a big money business of your own. Don't lose a minute. Get the facts at once. All information, fully illustrated with pictures, is free. Send the coupon—or send your name on a penny postcard. There is no charge now, or at any other time. We may be limited in the number of Warner Laminators that can be made up, so don't put this off. Send for the information on this exciting opportunity today.

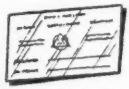
WARNER ELECTRIC CO
1512 Jarvis, Dept. L-12-P, Chicago 26, Illinois

Thousands of Beautiful Art Creations

No one yet has been able to list the thousands of gorgeous articles that can be made by Laminating as explained in our Free Information. Just a few are **COSTUME JEWELRY—CIGARETTE BOXES—JEWEL CASES—GLOVE AND HANDKERCHIEF BOXES—CUFF LINKS—NOVELTY BUTTONS—TRAY—CANDLESTICKS—COASTERS—CLOCK CASES—LAMP BASES PICTURE FRAMES—BOOK ENDS—PAPER KNIVES—KEY CHAIN CHARMS—CHECKERS—CHESSMEN—ADVERTISING SIGNS—NAME-PLATES—BOOKMARKS—BELT BUCKLES—TIE RACKS—KEEP-SAKES OF ALL KINDS.**

$5-$10-and $20 BILLS COME TO YOU IN THE MAIL

By our MAGIC MAIL Plan you sit at home, send out mail, and get back money and orders. Additional profits in supplying local people with lifetime protection for **SNAPSHOTS—IDENTIFICATION CARDS—DISCHARGE PAPERS—DRIVERS' LICENSES—SOCIAL SECURITY CARDS—VOTERS REG. CARDS—MENUS—BIRTH CERTIFICATES—CREDIT CARDS—BIRTH AND WEDDING ANNOUNCEMENTS—RAILROAD PASSES—IMPORTANT DOCUMENTS OF ALL KINDS.**



Lifetime protection. See how laminating protects against wear, soiling, and moisture damage with its smooth, flexible, plastic coverings on each side. LIFE-TIME PROTECTION needed for valuable or sentimental objects of all kinds—even a priceless whisp of hair can be laminated. Think of the countless thousands of profit items for your Laminating Press

WARNER ELECTRIC CO. Dept. L-12-P
1512 Jarvis, Chicago 26, Illinois

Rush complete information with illustrations showing the things I can make and the money possibilities in Plastic Laminating. All this is free. I do not pay a penny now or at any other time. No salesman is to call. Send all facts by prepaid mail. Be sure to tell me how I get orders and money from my Postman by your MAGIC MAIL Plan.

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

MI Classified Ads

Your advertisement can reach this mail-buying audience of multi-million readers for only 80c per word . . . payable in advance . . . minimum 10 words. Copy to be inserted in November issue must be in the office September 3. Mail to MECHANIX ILLUSTRATED, 67 West 44th Street, New York 36, N. Y. Word count: Zone number free. Figure one word: Name of state (New Jersey); name of city (New York); sets of characters as in key (14-D); also abbreviations as 35MM, 8x10, D.C., A.C.

SAVE MONEY • ORDER BY MAIL

ADVERTISING SERVICE & AGENCIES

$10,800 PROFITS! YOUR Own Mailorder Business! No capital risk! "Success Plan" (worth $2) free! Write today! Treasury, 149 Storer, New Rochelle 10-X, N. Y.

ADVERTISE: 24 WORDS, 100 Canadian Newspapers, $5.50. Lists Free. Advertising Bureau, 10511-B Springfield, Chicago 43.

LISTS COUNSEL Investigations. Advertising planned, prepared, placed. Boyle, Clinton, New York.

AGENTS WANTED

MAKE EXTRA Money—for yourself, club or church. Up to 100% profit selling big value Christmas, All-Occasion greeting card assortments to friends, others. 7 leading 21 card $1.00 boxes, Religious and Novel cards. Gift Wrappings, Ribbons, Stationery, Napkins, Animated Books, Sewing Kits, unusual Gifts. Over 150 items. Bonus plan. Experience unnecessary. Write for Samples on approval, Special Offers. Hedenkamp, 361 Broadway, Dept. MI-19, N. Y.

BARGAINS—TERRIFIC Savings—Job Lots —Close-outs! Also save up to 50% on complete lines of Drygoods, Clothing, Hosiery, Notions, Drug Sundries, Toiletries, Novelties, Gifts, Jewelry, Television, etc. 2000 items. Send 25c for Illustrated Wholesale Bargain Catalog, Close-out Flyers, and Special "Get Acquainted" offer. Valuable merchandise certificate (worth many times 25c) included Free. Reliable Jobbers, 311-C North Desplaines, Chicago 6.

MAKE $6.73. YOU sell one—and they're amazingly easy to sell! We have new Adding Machines in original factory cartons you can sell for only $14.95 and you make 45%. They're executive model portables, precision built with automatic clearance, direct subtraction, fully guaranteed. Send for life size color photo with full details. Write today to Lightning Adding Machine Co., Inc., Dept. MI-1, 1260 West Second Street, L. A. 26, Calif.

AMAZING MONEY Making Offer—$50 or more selling 100 boxes America's Leading Christmas Cards. Samples On Approval. Complete Line. Free Samples Personal Christmas Cards and Stationery. Sensational Bonus. Write. Lorain Art Studios, Dept. 121, Vermilion, Ohio.

VALUES GALORE—100 Blades 45c. Gross Needlebooks $4.80. Automatic Cigarette lighters $7.20 dozen. Full size 25c Ball pens $8.40 Gross. Bargain Catalogue. 5001 Items Free with order. Cut rate wholesalers since 1916. Mills Sales Co., 26 W. 23 St., New York.

AMAZING BIG Profits Selling Exclusive Sunshine Christmas Cards. Nationally Famous 21 for $1.00 assortment is unequalled, sells on sight. Other tremendous Sunshine Values: Merry Holly-Day, Nature Prints, Park Avenue Kromekotes, Scripture Text, Gift Wraps, Stationery, etc. Send for Samples on Approval. Earn Big Money Now! Sunshine Art Studios, Dept. MI-9, Springfield 1, Mass.

DO YOU Need Money? $35.00 is yours for selling only 50 boxes of our 300 Christmas Card line. This can be done in a single day. Free samples. Other leading boxes on approval. Many surprise items. Experience unnecessary. Free samples Personalized Christmas Cards, Stationery, Napkins. Write today. It costs you nothing to try. Cheerful Card Co., 10 White Plains, New York.

AT LAST! Something New and Sensational in Christmas Cards. Make Extra Money Fast! Show Satins, Velours, Metallics. Gets Easy Orders. Pays up to 100% Cash Profit. 30 Free Samples. With Name 50 for $1.25. Big Line. Amazing new Glo-In-The-Dark Ornaments, Personalized Matches, Stationery. Several $1.00 Boxes on Approval. Puro Greetings, 2801 Locust, Dept. 264-L, St. Louis, Mo.

CASH IN On Your Spare Time! Sell beautiful new Regal Christmas Greeting Cards and Gift Assortments. No experience necessary. Costs nothing to get started. Show wonderful samples to friends, relatives, neighbors. Merely take orders and pocket up to 100% profit. Write today for samples on approval. Regal Greetings, Dept. 90, Ferndale, Mich.

JUST OUT! New Thrilling Sensation in Christmas Cards. Make Big Money! Show Lustre Foils, Satins, Brilliants. Amazing Values bring Easy Orders! Magic Glo-In-The-Dark Ornaments, Personalized Stationery, Matches. 30 Free Samples. With Name 50 for $1.25. Several $1.00 Boxes on Approval. Joy Greetings, 507 N. Cardinal, Dept. 59-C, St. Louis, Mo.

EXTRA MONEY! Make up to $1.00 a box selling amazing value Christmas, All Occasion greeting cards, gift wrappings, gifts. Bonus. Surprise Offer. Experience unnecessary. Request Feature samples on approval, free samples Name Imprinted Christmas Cards, Stationery, Napkins and free catalog. New England Art Publishers, North Abington 719-A, Mass.

MAN TO earn $90 week up. Long needed invention. Advertised Saturday Evening Post, Colliers. Prospects everywhere. Full or part time. Exclusive. No investment. Free samples. Write Red Comet, Inc., Dept. 26-C. Littleton, Colo.

YOU WILL make more money, day after day, year after year, selling Du Pont Nylons, priced to sell and repeat. Details Free. Write today. Arch Hosiery, 104 N. Fifth St., Phila., X6, Penna.

NEED MONEY? $50.00 Yours, Sell only 100 boxes New Xmas Cards. Other amazing offers. Free samples imprinted cards. Feature box assortments on approval; over 100 profitable items. Work with a national leader. Pen-'N-Brush, Dept. MI-9, 139 Duane St., New York City 13.

EXCELLENT SIDELINE for printing and advertising salesmen. Decalcomania name plates in small quantities. Great demand. Also, make money with our line of Automobile Initials and Sign Letters. Free Samples. "Ralco." XL-Roxbury, Boston 19, Mass.

CHRISTMAS CARD Money-Makers! Everybody wants new 25 for $1.50 Gold-Name Cards. Cash in big. 161 fast-sellers. Profits to 100% on $1 boxes; Gift Bonuses. 4 assortments on approval; Imprints Free. Creative Cards, 2505 Cermak, Dept. 106-C, Chicago.

CALL ON Friends with sensational Christmas Cards in handy assortments. Price, $1.00. Profit up to 50c. Also popular-priced Personal Christmas Cards, Everyday Assortments, etc. Samples on approval. Wallace Brown, Dept. R-4, New York 10, N. Y.

BE A Money Maker . . . Represent magazines year around. Wonderful home work. Big Christmas profits now. Liberal commissions. Everything furnished. Write for Free Catalog. McGregor Magazine Agency, Dept. 520A, Mount Morris, Ill.

BIG BARGAINS! Terrific Profits! Selling new—used Clothing. Suits $1.75. Pants 35c. Topcoats $1.00. Dresses 20c. Shoes 20c. As little as $10 starts you. No experience necessary. Free Wholesale Catalog. Superior, 1250-C Jefferson, Chicago 7.

A POSTCARD Can Put You In Business! Complete line. Leather jackets, 151 shoe styles. Big Commissions. No experience, no investment. Send postcard for Free outfit. Mason Shoe Mfg. Co., Dept. MA-22, Chippewa Falls, Wisc.

MAKE MONEY Introducing World's cutest children's dresses. Big selection, adorable styles. Low prices. Complete display free. Rush name. Harford, Dept. H-3341, Cincinnati 25, Ohio.

MEN-WOMEN. WE pay $25.00 cash bonus to match every $25.00 you earn in commissions on beautful fast-selling Nylons. Essential Products Co., 210 Fifth Avenue, New York 10, N. Y.

SELL FINEST Nylon Hosiery. Guaranteed against everything, snags, runs, holes. Demonstration kit free to you with actual sample stocking. American Mills, Dept. 399, Indianapolis.

NEED EXTRA Cash? Free Sales Kit. Sell personal initialed buckles with belts, cap badges, tie clasps, etc. Choose from 3000 emblems. Hook-Fast, Box 1425MI, Providence, R. I.

NEW PLASTIC Mending Tape. Just press on! Repairs clothing instantly. Lightning seller. Samples sent on trial. Kristee 152, Akron, Ohio.

BIG DAILY Profits. Free Sales Kit. Sell personal initialed buckles with belts, cap badges, tie clasps, etc. Choose from 3000 emblems. Hook-Fast, Box 480MI, Roanoke, Va.

BUY WHOLESALE thousands nationally advertised products at big discount. Sent free "The Wholesale Plan." American Buyers' Service, 629-G Linden, Buffalo, N. Y.

SELL BIG Money Maker to Men and Women. Easy handwork makes fast-selling useful articles. Sample free. Sunmade Company, Brockton 64, Mass.

GOLD LACQUERED and silver sign letters. Windows, doors, trucks. Standard Sizes. Penny and up Samples. Atlas-M, 544 West 79th, Chicago 20.

SALESMEN, DISTRIBUTORS—Fast Selling Costume Jewelry direct from factory; big picture catalog free. Pickcraft, L-19 Bank, Attleboro, Mass.

NYLON UNIFORMS, immediate delivery, immediate profits. Free sales kit. Superior Fabrics, Dept. I-9, 3936 Market, Philadelphia 4, Penna.

WHERE TO Buy 800,000 articles direct from Manufacturers. Save by buying direct. Sent Free. "Your Profits Under the Spotlight." Glass Pub. Co., Ellwood City 7, Penna.

MILITARY—POLICE Ju Jitsu, 50c! Free Novelties Bookalogues! Hirsch, Spring Valley I, N. Y.

BIG PROFITS selling ties. ($2.00 values), $6.50 dozen. Free catalog. Empire Cravats, 648B Broadway, New York 12.

MAKE WEDDING Profits. Sell invitations, napkins, matches. Samples free. Dunbar's, Middlebush 4, N. J.

BOOK "505 ODD, Successful Businesses" free. Work home! Expect "Odd"!! Pacific-21C, Oceanside, Calif.

SHINE SHOES Without "Polish." New invention. Lightning seller. Shoes gleam like mirror. Samples sent on trial. Kristee 150, Akron, Ohio.

SALESMEN WANTED

GET INTO Million Dollar Work Clothes Business! Earn big money now, unlimited future! Sell finest-quality embroidered uniforms and work clothes to factories, garages, service stations, lumber yards, everybody! Huge profits possible. No experience needed. Gorgeous selling kit, actual fabric samples, everything Free! Write Topps, Dept. 489, Rochester, Ind.

FRUIT TREES! Stark Bros. sensational new "Dwarfs." Also standard size, exclusive patented, trade-marked varieties produce abundant, larger, better apples, peaches, pears. All fruit faster growing, quicker bearing. Also beautiful ornamental trees and shrubs. Get giant new Colorphoto Catalog Free. Stark Bros., Dept. 30093, Louisiana, Mo.

WOMEN! MEN! Make extra money in your spare time. No house-to-house canvassing required. New Car given as bonus. Amazing nylons guaranteed as long as 9 months depending on quantity, against runs, snags, holes, or replaced free. Rush name and hose size for simple money making plan. Lowell Wilkin, 1829 Wash., Greenfield, Ohio.

SALESMEN WANTED in different parts of your state to call on restaurants, cigar stands, drug, grocery stores. Variety carded merchandise. Unusual profits for salesman and merchant. Request territory wanted. Old firm, AA-I rating. Contact P. M. Laymon, Sales Manager, World's Products Co., 1005 West St., Spencer, Ind.

AD MATCHES! Sell Amazing Designs—20, 30, 40 and 240-light book matches. Bigger spot cash commissions; every business a prospect. Low prices for high quality. Repeats. Start without experience; men, women; full, part time. Buy Nothing! Sales kit furnished. Match Corp., Dept. MI-17, Chicago 32, Ill.

WANT TO Make Real Money? You can positively make $50.00 a day and up selling a brand new item going to every type of Food and Beverage Store, Factories, Laboratories, Hospitals, etc. First time advertised. Samples Furnished. Utility Durawear, 53 West Jackson Blvd., Dept. MI-9, Chicago 4, Ill.

ADVERTISING BOOK Matches—Cash in on big demand; sell union label matches. Cuts for all businesses and political parties. Free powerhouse selling kit, low prices, protection guaranteed on repeat orders. Cash commissions. Superior Match Co., Dept. F-952, 7530 Greenwood, Chicago.

IS $210. A week worth a postcard to you? Then rush card with name and address for special Free Trial Plan that sells amazing new Automatic Refrigerator Defroster "like hot cakes!" Write to Mr. Lewis, D-Frost-O-Matic Corp., Dept. M-101, 173 W. Madison, Chicago 2, Ill.

ANYONE CAN sell Hoover DuPont Nylon Uniforms for beauty shops, waitresses, doctors, nurses, others. In white and colors. Exclusive styles. Top quality. Low priced. Exceptional income. Real future. Equipment free. Write fully. Hoover, Dept. E-102, New York 11, N. Y.

NEW JOBS open in selling! Send name, address for five free issues of Opportunity Magazine's money-making guide, listing hundreds of companies who'll pay you well, full or part-time. No experience needed. Opportunity, 28 E. Jackson, Dept. 19, Chicago 4, Ill.

SIDELINE FOR energetic salesmen—sell advertising specialties, calendars. Earn $500. monthly easy. Big commissions advanced, bonuses. Samples furnished. Continental Calendar, 542-P So. Dearborn, Chicago.

MAKE $3000 NEXT 60 days—selling 1953 calendars, advertising specialties and executive gifts line. Season on. Big commissions advanced. Outfit free. Meyerson Calendar, 605-MI Washington, Chicago 6.

SALESMEN $100.00 MORE weekly on present job using "amazing secret." Postcard brings startling information. Brennan, 4-25-L Lankershim, North Hollywood, Calif.

MAKE MONEY with fast-selling Bostonian Shirts. Blouses too. Spare time, full time. Sales Kit Free. Bostonian, 89 Bickford, Dept. R-12, Boston 30, Mass.

BUSINESS OPPORTUNITIES

$5 AN HR. & more possible in your home. You Can Paint It With Suede—Fabulous new business—spare or full time. Spray on rainbow colors—Auto dashboards and trunks—Signs—Radios—Toys—Figurines—Lamps — etc. — beautified with amazing new 3rd dimensional plush-like finish with touch-appeal as well as eye-appeal. I'll send you complete, step-by-step plans and equipment, including high-velocity spray gun for no-risk examination in your own home. Send no money—just name and address. Coast, 1004-CL S. Los Angeles St., Los Angeles 15.

WANTED! HOME Producers, by manufacturers in our Contact Service. Become a sub-contractor, casting plastic products for these companies. Thousands of easy-to-make items required. Cash in at home without previous experience. Write for free list of 100 most wanted items. Plastic Service Assoc., Dept. MI2, East Boston 28, Mass.

SPECIALIZED MAGAZINES will help You to success. Get latest copies through our Easy-to-Get-Acquainted Service. Hundreds of business, trade, educational, professional, hobby, sport, plumbing, poetry, poultry, printing, rabbit raising, radio, real estate, refrigeration, roofing, selling, welfare, specialized farming and others covering All interests. Send for List today. It's Free. Commercial Engraving Publishing Company, 34W North Kitter, Indianapolis 19, Ind.

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BE INDEPENDENT, be secure, have your own profitable business—earn $20 and more a day making beautiful, fast-selling lamps at home. No equipment needed. Illustrated course teaches you quickly. Course, parts catalog, wholesale price list—only $2. Gearon Co., Dept. 200-C9, 27 S. Desplaines, Chicago 6, Ill.

IMPORT-EXPORT! OPPORTUNITY, profitable, world-wide, mail-order business from home, without capital; or travel abroad. Established World Trader ships instructions for no-risk examination. Experience unnecessary. Free details. Mellinger, 79, Los Angeles 24.

BRONZED BABY Shoe mountings, supplies, and equipment. Plating assemblies, all types and sizes. Save 50% and more on slightly used units. Instructions. Free Catalogs. Hollywood Bronze Supply, Dept. F, 1624 E. First Street, Los Angeles 33, Calif.

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VENDING MACHINES—A post card may bring you the opportunity you are waiting for. No experience necessary. Stamps, nut, candy, gum and others. Small investment. Write Schoenbach Enterprise, Dept. 12, 1645 Bedford Ave., Brooklyn 25, N. Y.

MAKE MONEY At Home as renewal headquarters for all magazines. Big Christmas sales profits now. Liberal commissions. Supplies furnished. Write for Free Catalog. McGregor Magazine Agency, Dept. 520B, Mount Morris, Ill.

GOOD PAYING Business silvering mirrors, plating autoparts, reflectors, bicycles, bathroom fixtures, etc., by late method. No tanks or shop required. Outfit furnished. Free Booklet, Gunmetal Co., Ave. A, Decatur, Ill.

WATERLESS HAND Cleaners. Highly profitable home mail order and mfg. business. Simply add water to concentrates or ready-packed under your own label. Everything furnished. Western H. Aircraft, Los Angeles 19.

THROWN AWAY! Tons of ground rubber by tire recappers. Make it into Plastic Rubber of 1000 uses. Easy! Inexpensive! Start profitable business! Instructions with samples $1.00. Ceeten Products, 242-G Crozet, Va.

BIG MONEY and fun growing Live Miniature Ming Trees on your window sill. Write for Free rare tree seed and plan. National Nurseries, 8463-D South Van Ness, Inglewood 4, Calif.

RAISE PHEASANTS on the $100 week plan. Little capital and space can make you independent. Free details. Great Central Game Management System, Columbus 16, Kan.

CLASSIFIED ADVERTISEMENTS

LEARN PIANO Tuning, Repairing—at home in 30 days. Unlimited Income. Phonograph recordings, tools and instructions furnished. Write Capitol City Tuning School, Dept. 245, 129 E. Michigan, Lansing 16, Mich.

LEARN SEWING Machine Repair, Electrify, Rent, Sell Spare Time. Make "Big Money" like our other Men-Women do. New machines, motors, parts wholesale. Details free. Taylor Service, Hamilton MI-9, Ohio.

BIG PROFITS in chrome, silver, nickel, gold electroplating at home. Portable Tyco-plater only $5.95, including plating salts, formulas and instruction course. Tyco Metals, Box 13231-DI, Houston 19, Texas.

BUY WHOLESALE thousands nationally advertised products at big discount. Sent free "The Wholesale Plan." American Buyers' Service, 631-G Linden, Buffalo, N. Y.

START A Venetian Blind Laundry. Profit opportunity for lifetime business. New machine method. Free booklet on request. F. E. Co., 442 N. Seneca, Wichita 12, Kans.

MAKE TOUGH, durable plastic—1c pound. Makes attractive floors, walls, built-ins, roofs. Build good home, $150.00 room. Bays Laboratory, Oklahoma City 9.

LEARN METALIZING baby shoes, jewelry, gifts. Bronze, gold, silver. Complete success plan free. Kiktavi Building, 7217-MI South Broadway, Los Angeles 3.

HOME WORK! Addressing Envelopes. Free Details. Self addressed stamped envelope appreciated. Janosik Service, 5527-K South Sangamon, Chicago 21.

MONEY IN New Greaseless Doughnuts. Start in kitchen. No smoke. Sell stores. Free recipes. Irving Ray Co., 3605 South 15th Ave., Minneapolis 7, Minn.

EARN EXTRA money weekly mailing circulars for advertisers. Complete instructions 25c. Siwaslian, 4317-A Gleane Street, Elmhurst 73, N. Y.

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$1000.00 MONTHLY EARNINGS possible operating Bookkeeping or Income Tax Business. Details Free. Universal, Box 664-D, Springfield, Mo.

EARTHWORM BREEDING? First, get unusual story, "An Earthworm Turned His Life." Free. Earthmaster, Dept. 4, El Monte, Calif.

THE COLLECTION Agency business is one of finest opportunities today. Write G. H. Cole, Syracuse 2-MI, N. Y. for free folder.

START OWN Business—home, office; booklet describing "137 Business Plans" free. Elite Co., 220-G Grand Street, New York 13, N. Y.

EXTRA MONEY—No Selling—operate vendors. Amazing profits, details Free. Silver King, Suite 222, 622 Diversey, Chicago 14.

BUY IT Wholesale! Manufacturers, distributors offer 850,000 items. Literature free. Olsen, 1231-C East Third St., Duluth 5, Minn.

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MAKE FLEXIBLE Molds! Cast plaques, bookends, figurines! Free sample! H. Tooker, 630-E Chestnut, Hamilton, Ohio.

MAKE MONEY addressing envelopes. Our instructions reveal how. Paul Glenway, 5713 Euclid, Cleveland 3, Ohio.

BOOK "505 ODD, Successful Businesses" free. Work home! Expect something Odd! Pacific-23C. Oceanside, Calif.

SAWDUST. TURN it into cash. Twenty methods. Instructions 50c. Charles Company, 12-GAF, Norwood, Ohio.

ADDRESS ENVELOPES, Postals, at home —longhand, typewriter. Particulars 3c stamp. J. Torrey, Melrose 76, Mass.

TO $35.00 WEEKLY, Spare Time, Home Mailing Work. Lynn, 10420-X National, Los Angeles 34, Calif.

MAKE PERFUMES At Home. Write, "Carey Laboratories," 1914 Chouteau MI-9, St. Louis 3, Mo.

MONEYMAKING OPPORTUNITIES Literature Free. National Hobbies, Box 524, Rochester, Minn.

LIQUID RUBBER, make flexible molds. Free sample. Chaney, 1130 E. 16th St., Jacksonville 6, Fla.

$46 FROM SQUARE Foot Plywood. Jigsaw necessary. Write, Woodarts, Bridgewater, Mass.

FORMULAS—ALL Kinds—Real Moneymakers. Catalog Free. Kemico, Park Ridge 60, Ill.

RECAST OLD batteries into new. Latest Achievements. Battery Laboratories, Minneapolis.

HOW AND where to obtain Capital? Free details, Star Service, Wapakoneta, Ohio.

INCOME FROM local information. No selling. Write Neherco, La Verne 2, Calif.

EXTRA DOLLARS. Spin Angora Wool at Home. Angora House, MI, Springfield, Ill.

START BUSINESS Without Capital! Reliance 15-F Park Row, New York 38, N.Y.

EASY MONEY From Newspaper Clippings. Siegel, Box 183-MI, New York 2.

PRINT WITHOUT a printing press! Big Profits! Dept. 310. See page 34.

HELP WANTED

FOREIGN EMPLOYMENT construction men, building trades, helpers, office men, others, interested in foreign projects. High wages, quarters, transportation. Send $1 for foreign construction compendium and application forms. Foreign Service Bureau, Dept. MI-9, Metuchen N. J. (Not an employment agency —No fees.)

NEW BATHROOM Deodorizer. Hangs on wall. Banishes odors bathroom, kitchen. Lightning seller. Samples sent on trial. Kristee 175, Akron, Ohio.

FOREIGN & LATIN American Employment. 1952 "Foreign Service Directory" gives Up-To-Minute Facts on Military & Civilian Construction, Government Jobs, Major Oil Listings, Aviation, Transportation, Steamship Lines, Mining, Importers, Exporters, How-When-Where to apply, application forms, Hot List Firms Hiring. $1.00 postpaid. Global Reports, P. O. Box 883-MI, Hollywood 28, Calif.

ALASKA—LAST American Frontier. $1.00 brings 1952 Business Directory, Government Map, Construction Projects Military & Civilian, Homestead & Highway facts, Hunting-Fishing-Game Rules, Mining, Aviation. List of firms hiring. How-When-Where to apply. Alaska Opportunist, P. O. Box 883-MI, Hollywood 28, Calif.

FOREIGN JOBS. Contracts underway and soon starting in Africa, South America, Canada, England, Europe, South Pacific, Middle East, Mexico and Alaska. Send $1.00 for foreign job news, information, application forms, etc. DCS Foreign Job News, Dept. 268-AP, Bridgeport, Ill.

SHINE SHOES Without "Polish." New invention. Lightning seller. Shoes gleam like mirror. Samples sent on trial. Kristee 176, Akron, Ohio.

CONSTRUCTION JOB List. Published Monthly. $1.00. Dempster's Construction Scout News, Dept. 268-AO, Bridgeport, Ill.

MONEYMAKING OPPORTUNITIES

START YOUR Own Business on credit. Your own boss. 1586 of our Dealers sold $5,000 to $27,500 in 1951. We supply stocks, equipment on credit. 200 home necessities. Sales experience unnecessary. Pleasant, profitable business backed by world-wide industry. Write Rawleigh's, Dept. I-U-MOM, Freeport, Ill.

PROSPECTS UNLIMITED. Amazing new chemical used with our patented vaporizer kills flies, mosquitoes, roaches, ants. Golden opportunity. 40% profit. Valley Enterprises, 2301 South Dixie Ave., Dayton, Ohio.

START A buying service, buy wholesale thousands nationally advertised products. Make big profits selling at sizable discounts. Send postcard for details. American Buyers' Service, 628-G Linden, Buffalo, N. Y.

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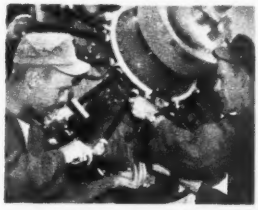

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Blow Yourself to a FORTUNE IN NATURAL GAS

You can still cash in on America's greatest money-mad stampede since the California gold rush.

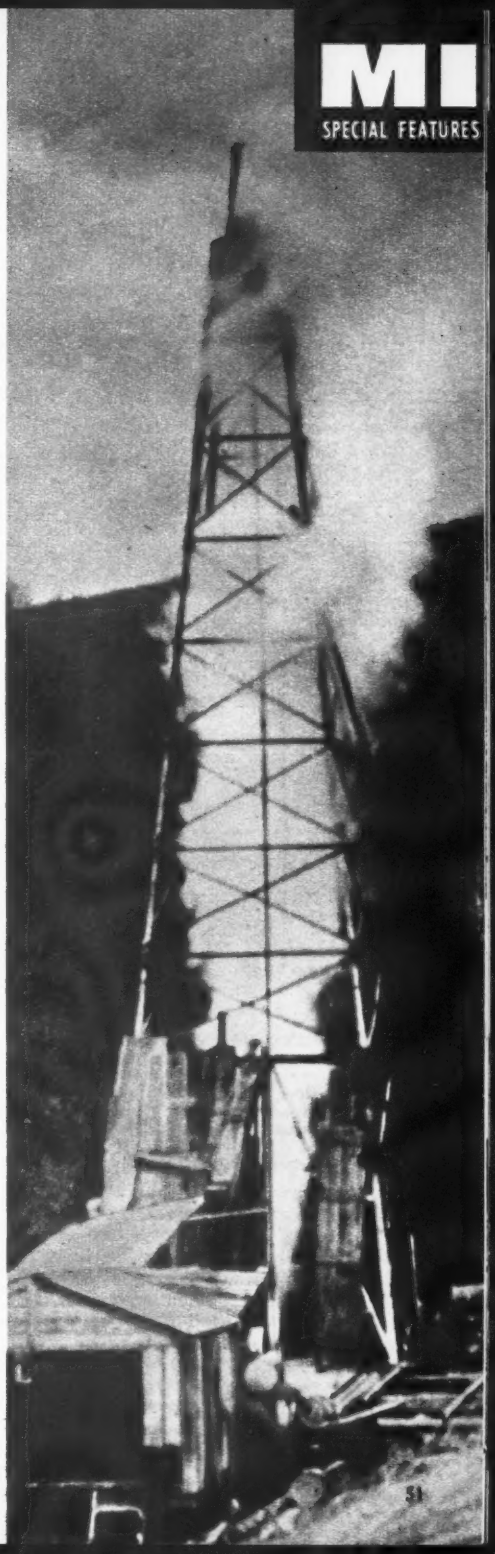
By Harry Kursh

YOU'VE probably never heard of the Noyly Development Company because about a year ago it didn't even exist. Yet early this summer the stock held by its investors, mostly small-town residents who had never before owned a share of stock in their lives, was split up at the fabulous ratio of 1,000 to one. Originally issued at $100 per share, the stock was selling for about $1,000 each.

What was behind it all? Natural gas—the most talked-about, get-rich-quick fever of modern times! Not since the days of the first oil well discovery or the California gold rush has there been such a mad rush to cash in on one of the most abundant of Mother Nature's richest natural resources.

Take the case of Dorcie Calhoun down in the Leidy Township of Pennsylvania. What Dorcie knew about natural gas only two years ago could have been put through the eye of a needle with room left over for the thread. But knowing the history of the area in which he was a hard-working farmer, Dorcie got the idea one day that much of the land around Leidy was rich with natural gas.

Dorcie checked with the experts, including official state geologists. "You're all



Blown 100 feet into the air by pressure from its mile-deep source, natural gas from a newly-drilled well in Renova, Pa., fills the air with flames set off by a spark. The well spewed out $10,000 worth of gas a day for three days before it snuffed out its own flames.

wet," he was told. "If there's any gas around Leidy it was used up years ago."

But Dorcie had a sneaking suspicion the experts were wrong. "It must be down there," he thought, remembering the days when, as a boy, he used to see gas bubbles coming out of tiny holes in the land.

Relying on his reputation for making worn-out machines do tricks—a knack he had developed in handling farm equipment—Dorcie rounded up an almost worthless second-hand drilling rig and got fellow townspeople to back him financially, each taking $100 shares. Dorcie said he was going to drill until he either hit gas or the drilling rig crumbled into a useless junk heap. For nearly a year, day after day, Dorcie and a few helpers kept the drill going, patching and repairing it almost daily. He had to go out and raise more money, too.

People were already beginning to call him a crackpot, a waster of money, a farmer gone nuts. Then, on a quiet Sunday afternoon early in the winter of 1950, one of the

Gas tycoon Dorcie Calhoun, top right, shows his brother the site of his first well. On Renova street, above, five gas company presidents discuss business. All were formerly merchants in town.

workers around the drill heard a deep rumbling noise in the ground.

"Get out of here quick!" he shouted hysterically. What followed was probably the happiest explosion Leidy citizens can expect to see as long as they live. It was gas!

Less than a month later, Dorcie and his backers, now organized as a prospectors' association, signed a deal with a major gas corporation out of which the income from that one well alone will yield them something like $350,000 a year. According to expert estimates, a single $100 share in Dorcie's outfit today will provide each of the lucky investors with an average of $200 a month for the rest of their lives.

The experts, of course, were astonished. Said Eugene Seifert, a district supervisor in Pennsylvania for the New York State Natural Gas Corporation: "My company has sunk 1,950 wells in the East and only 42 are producing. We have the finest geologists and millions of dollars' worth of the most modern equipment but we haven't had a real 'comer' since 1945. Yet this Dorcie Calhoun and his friends sink a single well by guesswork, using a decrepit old piece of equipment, in an area where every deep hole ever dug was dry—and they bring in one of the biggest new gas fields this side of Texas!"

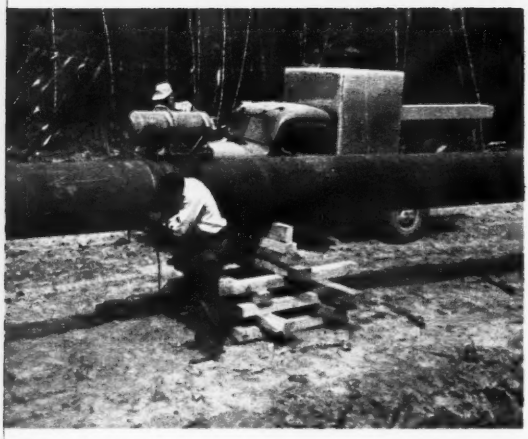
Naturally, Dorcie's success triggered a boom-town fever around the Leidy area which hasn't subsided yet. Not far away, seven brothers in the Meyers family of Altoona, learning that natural gas frequently comes in huge underground pools, made an investment in a one-acre campsite for $100. Last January, a well came in on that property and the brothers expect to share something like $2,000 a day in royalties.

In the Tamarack area, Mrs. Maynard Stradley spent many a long hour talking her husband into buying up a sub-marginal farm that hadn't earned a penny in years. In the back of her mind she had the notion that it might be over a natural gas reservoir. It was. The gas coming in on that land today is said to be earning them an income of $1,500 a month.

Just about the same income is being raked in by an ex-pipefitter for the Pennsylvania Railroad. He bought a few acres of land in a natural-gas area at a sheriff's auction. A few months later he struck it rich after he had leased the drilling rights to a group of wildcatters for one-eighth of the gas value.

As in prospecting for such natural resources as oil, ore and minerals, newly-developed scientific methods have made it possible not only to discover unknown deposits but to predict with a fair degree of accuracy just where natural gas can or cannot be found. Yet, new discoveries every year in the most unpredictable locations continue to astound the scientists.

As recently as 1945, Maryland, for instance, was considered one state that was entirely out of the gas-producing country. Then a gas-company geologist, acting on little more than a hunch, decided to wildcat a few wells in Garrett County. After drilling 4,910 feet, his grateful company



Welder crouches atop the new Texas-Illinois natural-gas pipeline, top, as workmen, above, wrap X-ray film around a 24-inch pipeline as they prepare to check welding with on-the-spot picture.

Crater 600 feet in diameter and 150 feet deep blew in around Arkansas oil well, top. Stream of dust and gravel, above, is blasted out of new pipeline by 600 pounds per sq. in. gas pressure.

now has a well producing 500,000 cubic feet of natural gas daily, worth about $5,000 a day.

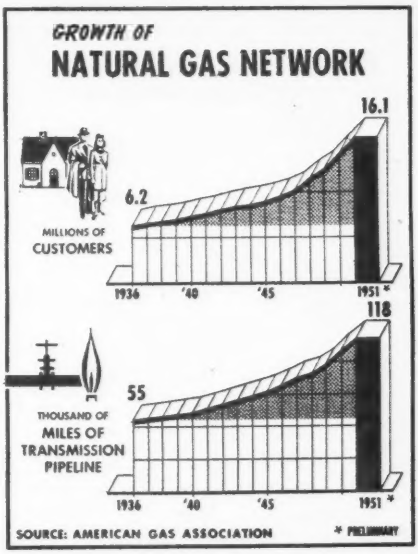
So valuable is natural gas that the United States Leather Company, one of the biggest and oldest in its field, sold out everything it owned, left the leather business entirely and went into the natural-gas business when gas was discovered last year on their property.

In the last 12 months, practically every economist, government official and business newspaper has termed natural gas the fastest-growing, biggest booming industry in the history of America.

Companies are investing an average of $1,000,000,000 a year in natural gas facilities and in the last ten years the industry has doubled in size. It has been adding hundreds of thousands of customers at such a rate that the industry is expected to double once more in size in the next ten years.

Oddly enough, natural gas is one of the oldest known natural resources and its use is almost as old as civilization itself. Records show that the Chinese were using it as early as 940 B.C. by piping it through hollow bamboo rods from holes in the ground. But, as a boon to the housewife and industry in general, natural gas did not get rolling until just prior to World War II. In fact, it was the war-time conversion of major pipelines to carry gas instead of oil that was really responsible for setting off the natural-gas boom. In the past, prospectors and wildcatters were only interested in oil. Natural gas, some

Network of thousands of miles of pipelines carries natural gas to millions of consumers. Chart at right shows rapid expansion till 1951. Experts predict 1952 figures will show even sharper rise.



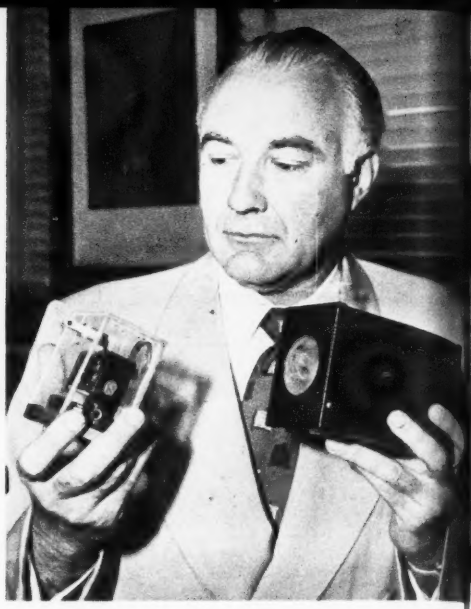
of which is found in every oil well, was wasted by burning off because it got in the way of getting the oil out.

Now with natural-gas pipelines covering practically the entire nation—a network which exceeds by 60,000 miles the combined track mileage of every single railroad in the country—the big hunt is on for natural gas alone.

Just what is natural gas?

To the chemist it is an odorless and colorless mixture of chiefly four gases found below the earth's surface: methane, ethane, propane and butane. To the industrialist, it is a cheap, easy-to-handle fuel with a great and almost unlimited future. Every day, engineers are finding new fuel uses for natural gas. They're also discovering that its [*Continued on page* 146]

Mighty Megaphone developed by General Electric is complete in itself and needs no external connections. Tiny electronic transistors do the job of vacuum tubes and operate from miniature batteries.



Disaster Alarm plugs into any electric wall outlet. In an emergency, power company lowers current frequency and alarm goes off. Inventor William Sprague holds home model, left; factory unit, right.

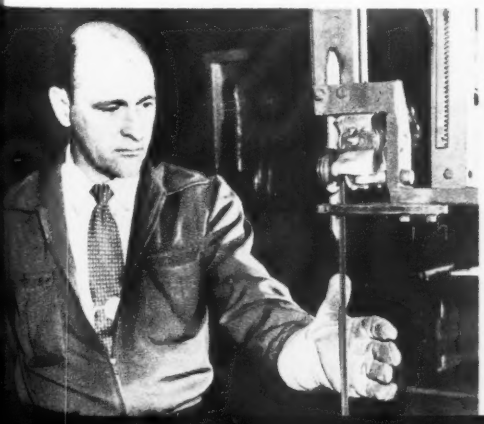
NEW in SCIENCE

Boat Tent of Albert Meyer, Berlin, leads a double life. It is a nine-foot rubber raft which zips apart to become a comfortable tent for two persons. It is shown as a boat at left. Conversion is illustrated below.

Vacuum Cast is specially designed bag filled with plastic granules. Used currently in medicine it solidifies when air is withdrawn and remains rock-hard until vacuum is broken, then becomes pliable.

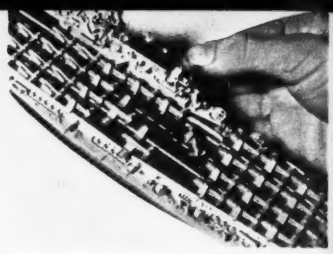
Digit Midget calculator is about size of pack of cigarettes and can add, subtract, divide, multiply and square. It is finger operated, can be worked with one hand. In Berlin, Germany, it will sell for about $94.

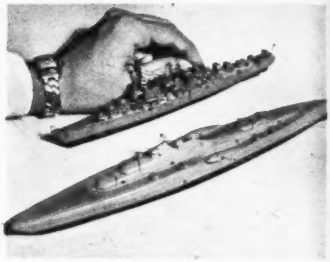
Toothless Saw invented by Jack Prince of Solar Aircraft, San Diego, is ordinary steel strapping. It is cheaper and will reduce accidents. In photo, hand is held on saw moving 7,500 feet per minute.



Auto Book Drop of Southern Pasadena, Calif., Public Library eliminates parking, encourages prompt returns. It is theft-proof, open 24 hours per day. Over 1,400 books were returned in first month.

Entire fleet numbers 81 warships. Carrier U.S.S. Enterprise in center of photo is largest model, took six months to build.





Aircraft of fleet number 345. Above is Tompkin's light cruiser of 1960.

Flea-Size Fleet

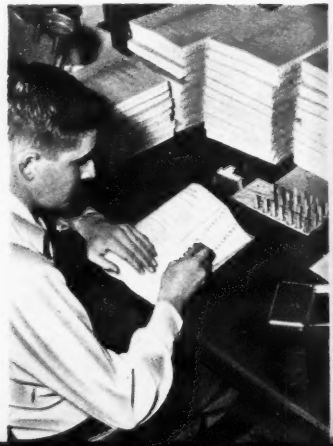
WILLIAM P. Tompkins, engineer at Douglas Aircraft in Santa Monica, California, has built the U. S. Navy in miniature. His models are so accurate authorities thought he was using restricted blueprints. They are carved from balsa wood, while sheet aluminum, pins, wires and needles are used for guns, terrets, lifeboats and rigging. Scale is fifty feet to one inch. Largest is 18½ inches long. •

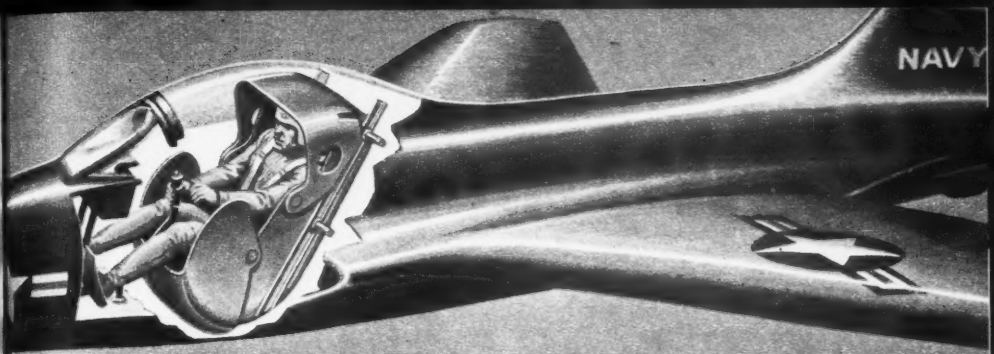
Index-trious Vets

DISABLED Veterans Indexing Service of Boston, started by vet Tom Keating, rented machines and in eight months last year indexed more than 10,000 phone books at $1.25 each. Now the idea is spreading. Hartford, Conn.; Springfield, Mass.; Washington, D. C.—all have their indexing services. Telephone company likes it, too. •

Vets Edward Neville, left, and Raymond Cote from Newington Veterans' Hospital drill books for indexing in Boston office.

Cote alphabetizes book. Letters on wooden pegs are hand stamped.

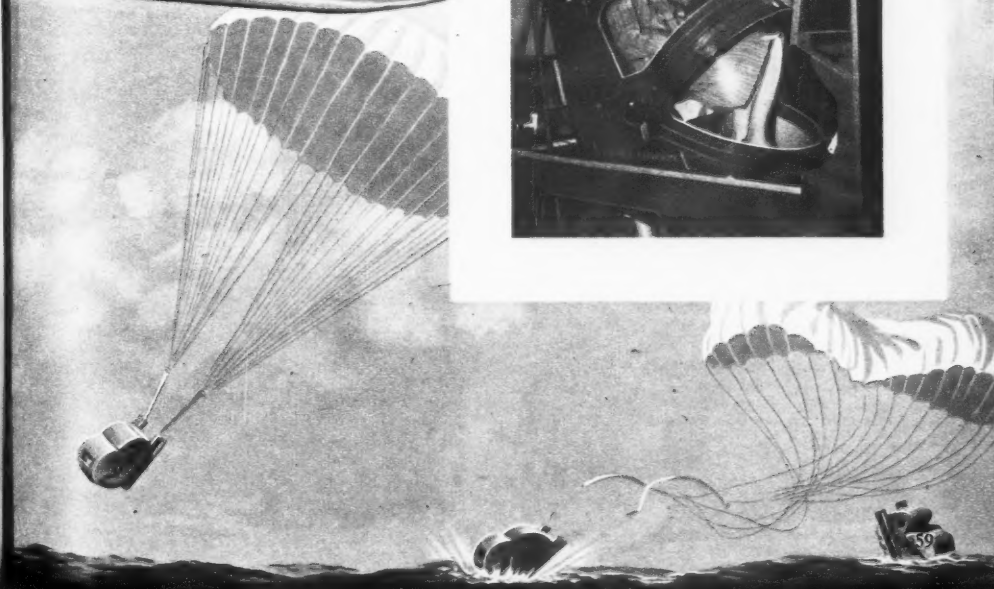




Supersonic Bail-Out

NAVY's latest device is a special seat capsule enabling pilots of supersonic planes to parachute to safety. In an emergency, the pilot puts his feet into special foot rests and pulls a pre-ejection [*Continued on page* 169]

In demonstration of a cutaway mockup, model pulls strap to close doors and fire catapult.



LOST: $300,000,000

Five trash collectors, right, found $7,220 mixed in with their garbage. They turned it over to police and, when nobody claimed the money, the court ordered it to be divided among the men.

By

Hugh Kingsley

Every year Americans manage to misplace a fabulous fortune in cold cash and personal property.

THEATER managers don't get much mail from an admiring public so when a letter arrived at the office of the New York show executive, he quickly tore it open.

"Dear Sir," it said, "I am attending the performance at your theatre on the evening of February 21st. I have seats G-1 and G-2. The reason I am sending you this notification is that I will be accompanied by my wife, who will lose a pair of gray suede gloves."

It was signed by the late red-nosed comedian W. C. Fields.

Whether the story is true or just a press agent's dream, it's at least good for a laugh. But true and not very funny is the fact that year after year, lost-and-found departments all over the country prove that

When a wacky radio quiz show sent a contestant searching for 1,000 buried silver dollars, Joe Roy and Henry Martell went looking too. They found the buried treasure and under the law it was theirs.

When gambler Frank Costello left $27,200 in a taxi, internal revenue agents stepped in and took $24,233.60 for back taxes. After giving the driver a reward, Costello's lawyer, left, had only $121.65.

Police station lost-and-found bureaus often look like bargain basements. This Denver lost-property department is overloaded with misplaced items which a constant stream of losers tries to identify.

When Mrs. Luvinia Allen, left, opened her door she found a package which her neighbor asked her to care for. When the neighbor didn't return, she opened it and found $64,000 in valuables, below.

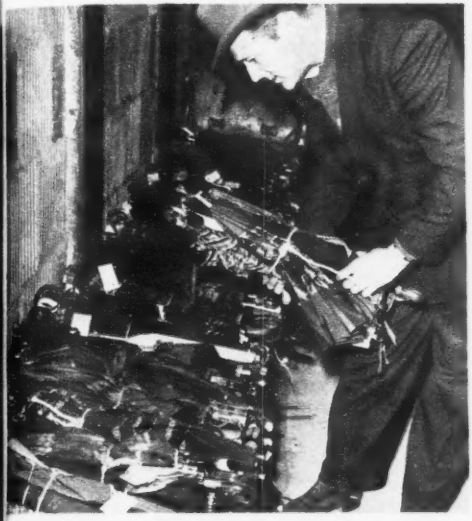
Americans just don't know how to keep a firm grip on their valuables.

In the last ten years, Americans have been losing an average of $300,000,000 annually in cold cash and personal property. And with travel constantly on the increase, this figure is expected to jump substantially within the next 12 months.

A check with any public lost-and-found department will show that Americans lose almost anything—from mink coats to diamond-studded bracelets, false teeth, glass eyes, pistols, fishing tackle, oxygen tanks, wild animals and even wooden legs. Perhaps most astonishing is the fact that many people are as careless with wads of money as they are with umbrellas.

Several months ago, Stella Kahn, a hard-working New York manicurist, was crossing the corner of Fifth Avenue and 33rd Street. She happened to look down as she stepped off the curb. "And there it was," Stella recalls. "All rolled up tight in a neat little package." What was it? Just a thick wad of $10 and $20 bills—a total of $650.

New York City's subways, buses and street cars are the favorite spots for umbrella-forgetters. These piles of unclaimed umbrellas will eventually be sold at public auction by the city.



Cab driver Max Rosenberg grins as he holds up a check for $1,200 and a string of matched pearls, his reward from the owners for turning over $22,500 worth of jewelry left in his taxicab.

A few days later, walking along Broadway and 72nd Street, she decided to take a taxi home. "No, not again!" exclaimed Stella, as she jumped into the cab. There on the back seat was an envelope someone had left behind. It was literally stuffed with $5, $10 and $20 bills. Stella turned over all her newly found money to the police and eventually got it back, too, when no claimants turned up.

Perhaps it pays to have a small boy's curiosity because eight-year-old Larry Foster was walking through the park in Clarence, Mo., when his eyes fell upon a fruit jar. Larry picked it up and took it home. Later, when his father poured out the contents, it took him a little while to count the $12,500 that was in the jar.

Experience shows that when you lose something around the home, it will invariably end up in the garbage. In Dayton, Ohio, a judge told five garbage collectors to split $7,220. They had found it in the day's trash they had been collecting from in front of private homes.

In St. Paul, Minn. not long ago, a man told his insurance agent that he misplaced his $1,500 diamond ring in his own home and couldn't find it. The house was literally turned inside out, but no ring could be found.

"I'm sure you must have thrown it out," said the agent.

"Why would I do anything as silly as that?" asked the man.

Nevertheless, the agent found out when his client's garbage had been collected last, traced it to a trash collector and from there to another garbage man in a nearby town where it was to have been burned in a huge field. A little careful detective work and the agent narrowed his search to a load that had just been dumped. He offered a $200 reward for anyone coming up with the ring. Next day the ring was back on his client's finger.

Probably the strangest and biggest case of lost property took place a couple of years ago in New Bedford, Mass. Oddly enough it involved a man in the insurance agency business, David Lumiansky. Driving to his office one day, David got out of his car to pick some berries in a patch he spied alongside the road. He came across an old shoe box wrapped in newspapers. The package was partly worm-eaten and Lumiansky kicked it out of the way. A corner of the decaying box fell apart and his eyes opened wide.

He forgot about the berries, snatched up the box and drove to his office as fast as he could. Once there, behind locked doors and in front of a couple of witnesses, David poured out the contents and started counting. The total $20,000!

David reported [*Continued on page* 156]

DEUCES WILD

Behavior of twins has mystified modern science. Why do they act, think and dream alike? And when there is trouble, why is it double?

By West F. Peterson

Atlantic City "Miss America" judges had a problem in 1947 when twins were named "Miss Tennessee."

OUT in Sebewaing, Michigan, one day last year ten-year-old Mary Eisengruber fell down a flight of stairs at school and cracked a bone in her left forearm. Although they were properly sympathetic, her parents and playmates had cause for mild rejoicing over the accident.

"Now, thank goodness," they said when Mary came out of the doctor's office wearing a sling, "we'll be able to tell you and Marilyn apart!"

Mary and Marilyn were identical twins, one the perfect reflection of the other. They had the same hairdos and wore the same clothes down to the smallest detail. Their identities were constantly getting mixed up at school, at home, on the playground and they were causing no end of confusion. But now, at least for the time being, Mary's sling would take care of all that.

So what happened? Several days later Marilyn took a tumble while ice-skating and broke the identical bone in *her* left forearm. And of course she was equipped

Clark twins of Huntington, Indiana, three sets of them, won the world's family basketball championship in 1949. They also have twin sisters. All were born within eight years.

with a sling identical to Mary's. The question of which twin was which proved to be just as perplexing as ever.

Incidents like this are of particular interest to psychologists who for decades have been probing the mystery of multiple births. Twins not only look alike, according to scientific findings, but they also think alike, act alike and even dream alike. When there's trouble, it often comes double. No wonder many people believe there's a jinx on twins.

Jinxed or not, twins, triplets, quadruplets and quintuplets have attracted plenty of attention ever since the mythical Romulus and Remus were suckled by a wolf and founded the city of Rome. In legend as in real life, twins can be plagued by tough luck; Romulus supposedly killed his brother and then disappeared in a storm.

Most parents today laugh at superstition and welcome the simultaneous arrival of two or more infants if they are financially able to provide for them.

In certain backward sections of the globe, however—the Kyushu Province in southern Japan, for instance—multiple births are considered a hoodoo, even a disgrace. Some Buddhists believe twins are the reincarnated forms of men and women who died in suicide pacts. There are many instances of relatives slaying one of a set of twins so that the survivor can enjoy a longer, happier life.

An expectant father in St. Louis feared the arrival of twins a few years ago, not out of superstition but because he knew two babies could *not* live as cheaply as one, so he paid a $90 premium for an anti-twin insurance policy with Lloyd's of London. The twins came and Lloyd's paid him $1,000.

Even so, the odds here were overwhelmingly in favor of the company. Statistical tables show that twins occur just once in every 87 births. The odds against triplets are 1 to 7,569; against quads 1 to 658,503, and against quintuplets 1 to 57,289,761. It's easy to understand why Doc Dafoe was somewhat agitated when he ushered

When Mary Eisengruber, left, broke her arm while playing, schoolmates could tell her from sister Marilyn. But not when Marilyn broke hers, too.

Members of Zephyr Twin's Club of Chicago, seven sets, board an airliner to attend an annual Twin's Convention that was held at Grand Rapids, Mich.

the famous Dionnes into the world.

Only about one-fourth of all twin births result in identical twins. These are developed from a single egg. Fraternal twins, who frequently resemble one another no more than any other siblings, are produced from separate mother cells.

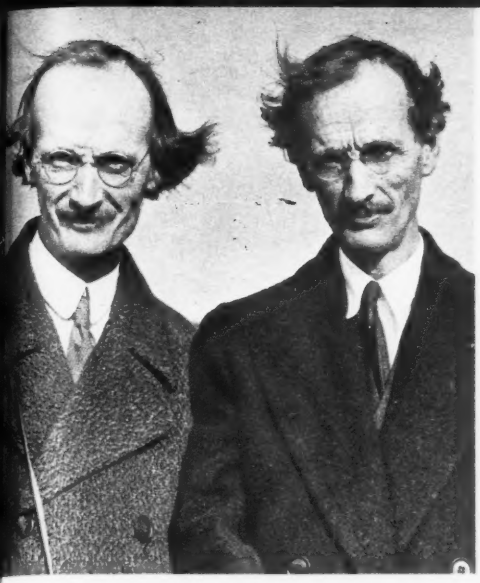
Incredible as it may seem, a set of twins can have two fathers. This has been established not only by medical testimony but by court decisions in Sweden, Denmark and the United States. In a South Dakota divorce case the custody of one twin was awarded to the estranged husband and custody of the other went to the wife. The second child was ruled to be the progeny of "a man across the hall" with whom the woman had relations soon after she slept with her legal spouse.

There are rare instances of twins being born many hours, days and even weeks apart. Longest known gap between multiple births is 44 days according to the American Medical Association records. The A.M.A. fails to note how many pairs of shoes the anxious father wore out pacing the hospital corridor during this period.

Twins have been delivered by Caesarean operation minutes after the mother's death. A most unusual operation was performed in Portland, Oregon, several years ago to remove a half-formed twin from the abdominal cavity of a 13-months-old girl. This "ingrown twin" developed from conditions similar to those which produce twins of the famous Siamese variety.

Smallest twins in recent medical history weighed one

Twin sisters, Mrs. Austin Karr and Mrs. Dal Bee Nichols of Tulsa, Okla., gave birth to twins, a son and daughter in each case. They had same doctor, shared same hospital room.



Jean and Auguste Piccard, balloonists and deep-sea divers, are unusual in that they are twins who have achieved fame in a specific field.

Michigan's famous Hume twins, Robert and Ross, are pictured as they broke the tape in a dead heat a number of years ago in Western Conference meet.

pound 14 ounces apiece; the largest, born to an Illinois farm wife, each tipped the scales at 11 pounds. Joined-together twins were delivered in Brooklyn with a single pair of legs, and in Moscow with a single torso. Operations to sever linked twins are seldom successful.

Your wife is most likely to have twins when she reaches the age of 35. However, a Michigan bride only 14 years old bore a pair of "bundles from Heaven," and so did a Grecian woman of 73! As to the father's side of the picture, Ed Lee, a rugged coal miner, set a record. The whole town of Ridgway, Oklahoma, turned out to celebrate when his wife presented him with twins on his 100th birthday.

"Guess I finally hit the jackpot!" said Ed.

For real jackpots you have to go back to ancient times on the banks of the Nile. Egyptian tomb inscriptions record as many as eight children being born at a single confinement. Some historians, incidentally, claim that Cleopatra was a twin and that she murdered her identical sister.

Any reports of sextuplets and septuplets being born in the Twentieth Century have come from such remote regions that scientists could not check up on them.

Nobody knows exactly why, but most of the conceptions resulting in multiple births take place in February, August and September.

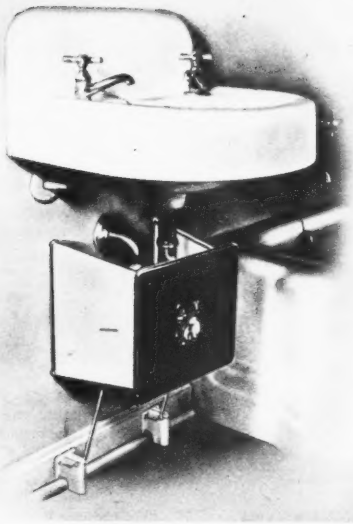
Twins, like cross-eyes and a liking for limburger, run in families. The tendency to have more than one child at a birth is inherited through the mother rather than the father. [*Continued on page* 96]

When Albright College announced a scholarship to first Berks County baby born in 1948, it didn't bargain for twins. But a generous jeweler saved the day by donating another scholarship.

1904 Crestmobile

Owner: Tom Kessinger, Beech Creek, Penna. Original cost: $900. Made by Crest Mfg. Co., Cambridge, Mass. Engine: single cylinder, 8½ horsepower, vertical under hood, shaft drive. Tire size: 28x3. Wheelbase: 76 inches. One of the rarest antique cars still running.

Engine: single cylinder, 8½ horsepower, vertical under hood, shaft drive. Tire size: 28x3. Wheelbase: 76 inches. One of the rarest antique cars still running.



Jack 'N Jill Handy Step can be permanently fastened under sink, places child at proper height to wash hands and brush teeth. Made of enameled steel, plywood platform. Young Products, Detroit.

WIN $25

Send in a sharp, glossy photo of a snazzy car, old-timer or new, posed as at left with owner or a pretty gal. Include self-addressed, stamped envelope (just in case) and all vital statistics about car and owner. Mail to Pin-Up Editor, MECHANIX ILLUSTRATED, 67 West 44 Street, New York 36, N. Y.

NEW for the HOME

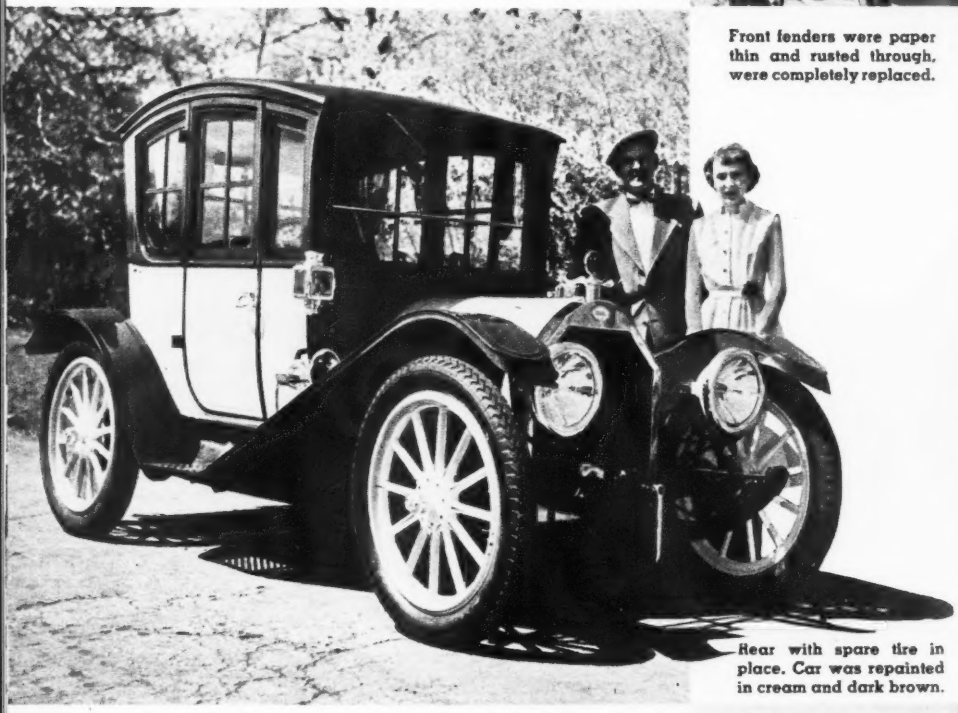
Tearless Onions are possible when housewife uses Onion-Ops. Special harmless, chemically treated lining keeps tear ducts dry. Adjusts to any size. Lenses are plastic. Jordon Lab., Springdale, Conn.

Faucet Heater attaches with a thumb screw, plugs into any AC outlet. It can be left attached permanently, goes off when water is turned off. Pilot light shows when current is on. Home-Aids Co., N. Y. C.

COVER STORY

A CAR IS REBORN

Front fenders were paper thin and rusted through, were completely replaced.

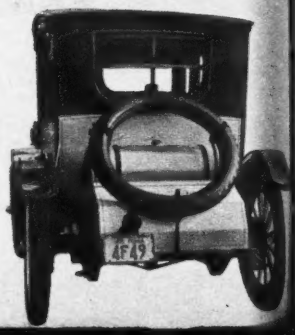


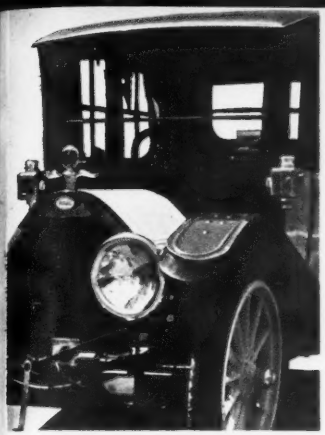
Rear with spare tire in place. Car was repainted in cream and dark brown.

Tony Koveleski and daughter Ann Marie with restored Regal.

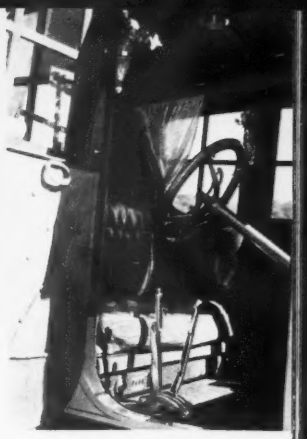
THIS 1914 Regal Colonial Coupe is one of the rarest cars in America. Mr. A. J. Koveleski of Scranton, Penna., discovered it in 1949, trucked it home and dismantled it piece by piece. Restored, it is a gem to behold. It took two years and about $4,000 before the little lady breathed again.

Its engine is four-cylinder with a 3¾-inch bore and a 4½-inch stroke, and it develops 22 horsepower. Clutch is cone type and ignition is by magneto. With a 100-inch wheel base the Regal weighs 2,500 pounds. Original cost: $1,250. •

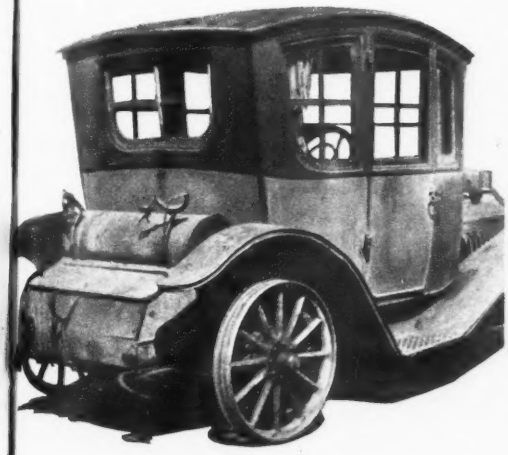


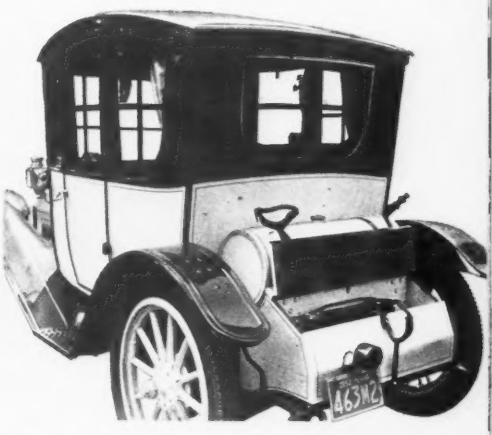


Headlights and brass sidelights were badly deteriorated. Fifty hours were needed for repair.



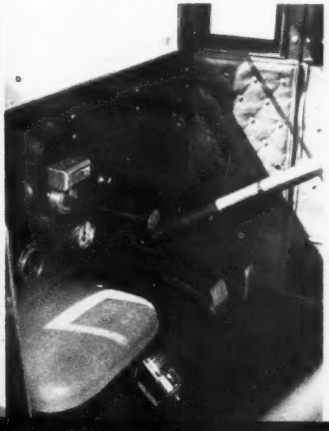
Diamond-tufted brown leather upholstery had dry-rotted and was replaced as were the mahogany door and ceiling panels. Hand-brake and shift levers, originally nickeled, were refinished in chrome.



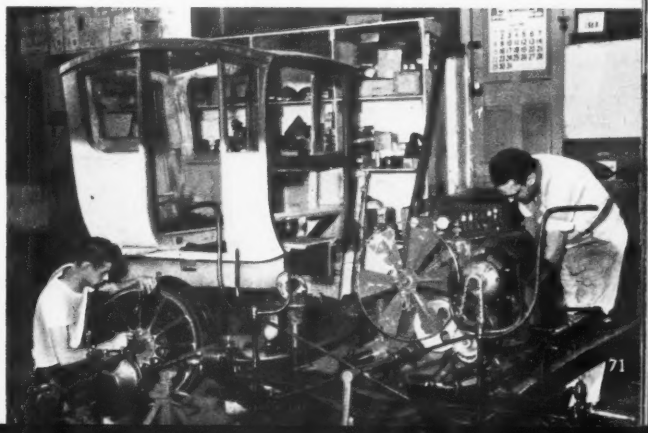


Before and after photos show how combination trunk, battery box, gas tank and tire rack were rebuilt.

Front interior showing right-hand drive, extra seat and extreme simplicity of dashboard.



Car was badly worn and was torn apart. Estimated mileage was over 100,000. All bearings and rings were replaced. Rods, valve guides and axles were reworked and new bushings were carefully machined.



A MONEY-MAKING idea

Their Business Brought Many Happy Returns

Artist Rosalind Welcher and her husband Fred Slavic show a new Panda promotional poster to staff.

When you get a greeting card by Panda Prints, don't expect sentiment.

It's much more likely to say "Drop dead."

By H. W. Kellick

At her drawing board, Rosalind Welcher dreams up the mad drawings and punchlines for the cards.

Panda's latest card, left, and earliest, right, are shown in front of map pinpointing sales outlets.

IT was a hot July afternoon a couple of years ago and greeting-card artist Rosalind Welcher was trying hard to coax funny ideas from her drawing board. Unable to turn on the humor, she began to doodle. Finally, after several hours, she fashioned an unkempt, buxom floozie who looked as though she had one Martini too many. In one hand the wench clutched a whiskey glass and her eye was on a partially filled bottle.

As a gag, Rosalind scribbled these words across the drawing: "To Mother. Stay As Sweet As You Are." The masterpiece was pinned on the studio wall and forgotten.

Two months later her husband, Fred Slavic, asked if she had cooked up any fresh Mother's Day ideas. "No," she replied. "But I'm still trying."

As Fred started for the door he noticed the Beer-Bottle Gertie pin-up. It sent him into a tailspin of laughter.

"It's not that funny," said Rosalind.

"Honey," shot back Fred, "you're a genius and don't know it. This is a terrific Mother's Day idea."

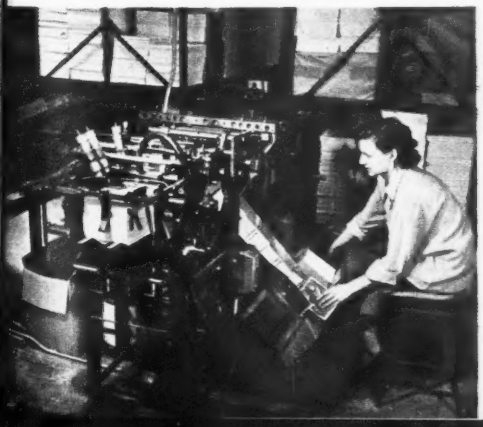
After a brief conference, they decided the idea was a little too rough for Mother's Day. But why wouldn't it work for her birthday? Within a short time after the card was on the market it became a national best-seller.

Wacky? Most of Fred and Rosalind's Panda Prints are on the gag side. "We try to keep our customers laughing," says Fred, "but the humor is sophisticated and satirical, never coarse or slapstick."

Take a look at another sample. It features a pot-bellied, behorned gent with a spear in his hand as he sits on a horse. The caption reads: "Gotterdammerung It!" Say it fast and your best friend will think you're swearing at him. Turn the cover page and you see the same stalwart warrior standing erect with spear in hand as he utters, "I forgot your birthday." The card is a perfect takeoff on pompous Wagnerian opera.

Then there's the one of a man holding a leash on a small, slow-moving pooch headed

Special machine which automatically pastes inserts and folds cards was designed by Fred Slavic.



Two printing presses roll out thousands of cards in large sheets which are then cut up separately.

From the apartment where they began, the Slavics have now progressed to this large factory with 4,000 square feet of floor space located in Bronx.

straight for a tree. The caption reads: "Some things can't be hurried." Now, what in the world would that greeting sentiment convey, anyway? Actually, you don't know until you turn the cover. Then, to your surprise, you learn that this is a get-well card.

Panda Prints are loaded with surprises and laughs. For instance, there's a card where an elephant sees pink people. Believe it or not, this is a birthday card. There's a card aimed at the victim of a co'd in the no'd, and a quack doctor, in the form of a duck, informs you that illness is for the birds.

How did Panda Prints get that way? Well, back in 1945, during the war, Fred Slavic was a merchant seaman. He met Rosalind Welcher, a free-lance artist, at a USO party in New York. Romance blossomed and they were married.

Fred had some unfinished business at sea. While sailing his cargo, he tried to figure out how his talent as a die-maker and tool designer could be combined with his wife's artistic talent. Many ideas were thrown into the hopper. Finally, he selected one. He was going to develop a process of molding paper into novelties.

Late that year, when Fred got out of service and returned to New York, he discussed the plan with his wife. Technically, it seemed like a good idea.

After a few months of experimenting, Fred and Rosalind had not found the answer to the proposed process.

Then one afternoon while Fred was fooling around the apartment he came across a small drawing which Rosalind had used as a Christmas card model. He made up a small die. Then he embossed the paper by putting it on the floor and stepping on the die.

The result surprised Fred. That evening when Rosalind came home she got out some paints and fashioned a greeting card out of the embossed doodle. It was different from anything they had seen.

Realizing that the market was flooded with embossed cards, they planned to be different. By adding some shading it gave the sheet an effect that the image was cut out and pasted on cardboard.

They searched local greeting cards for similar effects, but none were found. They had hit on a new process.

Early in 1946, Fred took sample cards around to some leading New York stores and asked buyers if there would be a market for these cards. The reaction as a whole was favorable.

Pooling their savings of $6,000, Fred and Rosalind started from scratch. They never had any previous business experience. They had no inkling that it was supposed to be tantamount to failure to try and buck the established greeting card trade. Yet, they rented a small loft in New York over a busy barber shop. It was an old, shabby building. But the $50 a month rent interested them. Their equipment consisted of broken down chairs, a table and a desk.

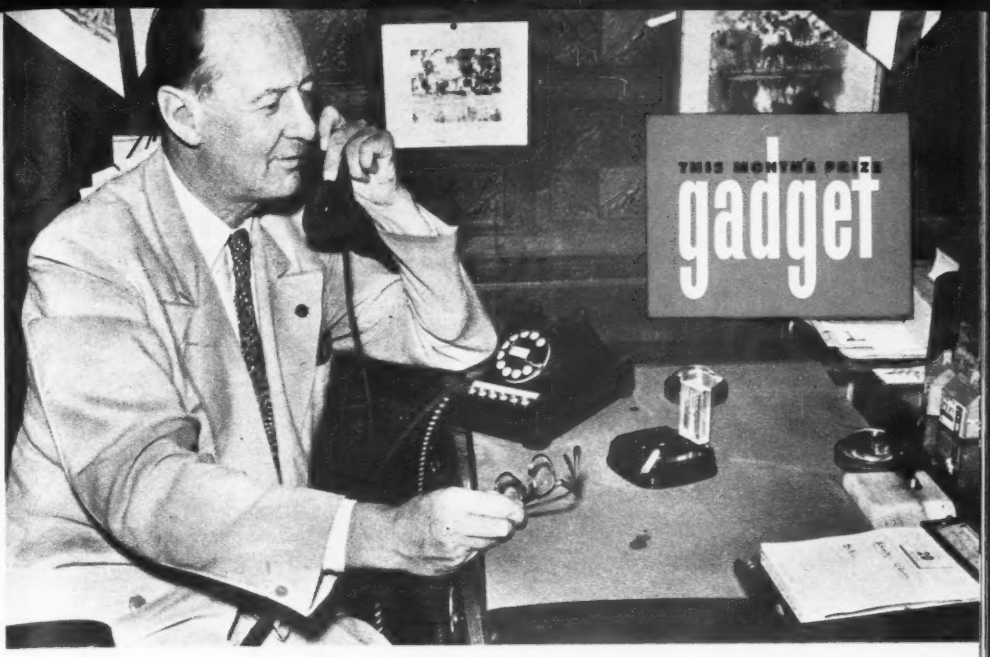
They started out by designing some embossed displays and novelties. People were intrigued by the novelties but no one could find a use for them.

With one strike against them, and somewhat discouraged, Fred and Rosalind built a silk screen outfit and burned the midnight oil learning to operate it. Floundering around, they produced some sample Christmas cards, in the embossed method.

One afternoon, while running off some sample cards via screen process, a San Francisco jobber came up to the loft. He had heard they had some nice cards. Could he see them? From the samples he placed a $1,000 order. Fred and Rosalind jumped for joy.

This was the big break they were waiting for. Now they were in business. They began to print the cards. As they printed them, they discovered that the black ink failed to dry. As a result, the cards smeared.

They tried again. Still the same thing happened. Unable to lick the vicious problem they tried [*Continued on page* 141]

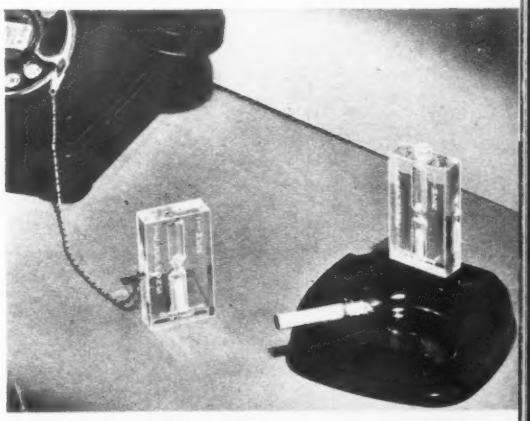


Inventor seated at his desk at 10 East 23rd St., New York City. When England's King and Queen visited the U. S., Whiting gave the running commentary for the Empire.

Telephone Timer

OLIVER K. Whiting of London and New York is quite famous as a public speaker as well as a designer and manufacturer of leather articles. In his speaking engagements he has had to work by the clock and he soon noticed that Americans are quite time-conscious also. One day while making a phone call from a client's desk he saw an hourglass standing nearby. He timed his call with it. Thus was born the idea for the Telephone Timer, a plastic miniature with three minutes' worth of sand to remind the caller to keep his conversation to a minimum. Mr. Whiting's gadget is made to save you money and has made him MI's $50 gadget award. •

Sand timer operates like ancient design. Models are made to hook to phone or set in ashtray.



WIN $50

Dreamed up a neat gadget? If you're pretty keen about that pet project of yours, get busy and work it out in your shop. Then send pictures and a description of your invention to the Gadget Editor, Mechanix Illustrated, 67 West 44th Street, New York 36, N. Y. Each month the best entry gets a cash prize of $50.

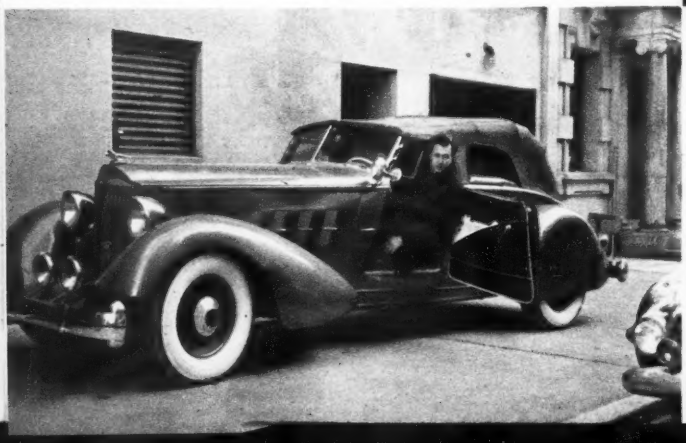
hobby
HALL OF FAME

He likes his Playboy, left, and Phantom Corsair, only one of its kind.

Herb Shriner Collects Rare Cars

TV star Herb Shriner, known to multitudes for his Hoosier wit, has yet another facet that isn't nearly as well known as his humor. Like many other native sons of Indiana, home of the Indianapolis Speedway, Herb became interested in autos as a lad, recalls buying his first car for three dollars. That's how his hobby started.

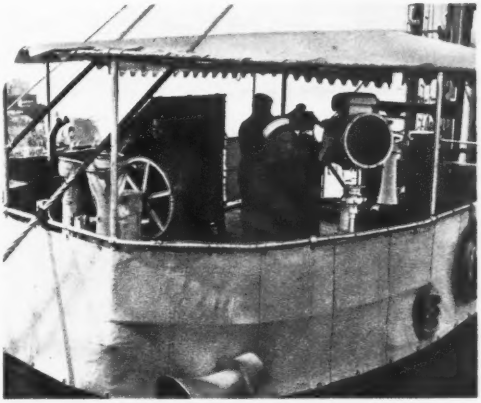
One of his best-loved cars is a '34 Packard sports car, designed by Sakhnoffsky with a Le Baron body and recently shown at the International Motor Sports Show in New York City. He says that by careful trading, his car hobby hasn't cost him much more than the average car owner who turns in his old car every year. •



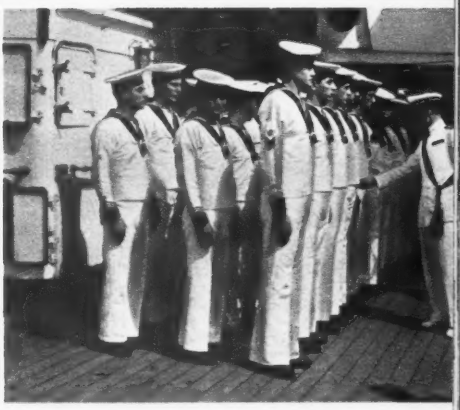
His Packard 12 has pony-skinned seats, four forward speeds. Corsair, top of page, has Cord motor, five speeds, extendible bumpers and automatic hood raiser.

Amerigo Vespucci Rediscovers America

Italian training ship Amerigo Vespucci, named for the famed explorer, recently paid a visit to America. She resembles one of Lord Nelson's ships.



Nestled among the sails on deck of the Vespucci is the foreward wheelhouse, usually manned by a group of young Italian sailors in training.



When this 3,543-ton vessel hits port, officer-of-the-day gives crew a final once-over. The ship, built in 1930, has a sail area of 22,000 square feet.

Brass covers on the end of all the ship's guns are decorated with portraits of Amerigo himself.

Four wheels in the main wheelhouse are used for piloting practice by the novice sailors.

Mass of ropes controlling the sails must be carefully rigged to prevent them from tangling.

McCahill Tests the

Tom and his wife Cynthia look over the 120-hp Ambassador engine—with help from Joe.

"Finest shock-proof ride in the world today" says Uncle Tom of the new Nash line of cars which Farina designed.

'52 NASH Ambassador

IF I only had Danny Kaye's hair, I might be able to sing "Pina is the Belle of Gasolina." But being as bald as a worm, I'll have to settle for a non-singing statement: Pinin Farina is the Rembrandt of automobile design. For those of you who don't read the ads, Farina is the guy who designed the new Nashes.

Some anonymous wag on the West Coast is reputed to have remarked that "there was more Wheatena than Farina in the new Nash line." When I rudely asked one of the Nash brass just how much of the design was actually Farina, he admitted that there was, through necessity, a bit of the Midwest mixed in with Sunny Italy. This is quite easy to understand, once the facts are rolled out on the table.

All those sexy Farina body jobs we have seen on Alfa-Romeos, Lancias and other imported chassis have as much interior room as the average-size soap box. Most of them are two-seater jobs with just enough baggage space for a fast weekend for a short midget. When Americans hit the road, they like to take everything along from Junior's surf board to Aunt Petunia's skiis, to say nothing of at least twelve changes of clothes. In

The 1952 Ambassador was one of only two cars Tom has driven which was able to make a back-breaking test hill, below, near his New Jersey home, in high gear all the way.

Plenty of changes have been made in the looks of the new Nashes, both inside and out. But famed Italian designer Pinin Farina retained well-known features such as air-conditioning, reclining seats.

Symbolizing the re-styling of the new Nash line are the futuristic hood ornament, top, and the crest and script identifying the work of Farina. Ambassador's performance is "among the very best."

Europe if a guy has enough room to carry a spare tail for his beret and a Bikini bathing suit for his little pigeon, he's as happy as a Coney Island clam at high tide. Faced with the problem of getting that Farina look on what would amount to an overgrown jitney on the Continent, I think Pinin has done a pretty good job. He has turned out the best-looking Nash in the company's history yet it is still loaded with room. All the Nash features, such as the reclining bed seats, Weather Eye air conditioning and Pullman ride are still there.

Incidentally, the new Ambassador has, in my book, the finest shock-proof ride in the world today. When I was testing this car I took it to the roughest, gouged-out testing road I know in the East. At varied speeds up to 60 I hit bumps and even large rocks that would have broken your back and ripped away the front axle assembly of any car made ten years ago and even of some cars made today. The Nash Ambassador, however, remained silent and absolutely unruffled by these blows. A short time ago I reported that the Buick Roadmaster had the finest rough road ride of any car made in America but that was before I tested the Nash Ambassador. This car is undoubtedly the best bump-leveler we have. Both the wide front and back seats are as comfortable as a French feather bed and in every other way it is a pure champion of ease for Madame Tenderbottom.

To get behind the wheel of the Ambassador is like being on the bridge of the Queen Mary. Farina has dropped the hood between the fenders in the best Packard manner, so that the front visibility is good, but it still gives the sensation of steering a three-acre lot or going through the Tun-

nel of Love in a coal barge. Oddly enough (to me), one of the Nash officials bragged that this new job was two inches wider than a Cadillac. Well, bub, if you buy cars by the area they cover, you'll have to go a long way to beat the Ambassador. On an acre-per-dollar basis, this is the bargain of the year.

In performance, Pinin's design has done nothing for the new Nash. This year's engine has had the horsepower boosted to 120 from 115 and the torque was raised to 220 from 210 by increasing the bore by an eighth of an inch. In spite of this I found all acceleration figures slightly slower than those of 1951. Zero to 60 in 1951 took 15.3 with an overdrive unit and the best I could get out of the new job, also with overdrive, was 15.9. Top speed is about the same as last year, with overdrive, meaning somewhere between 96 and 98 miles an hour. With special available speed equipment under perfect conditions on the Dry Lakes, some Nashes have been clocked at better than 100 but for all practical purposes such cars can be considered just about as stock as moonglow.

The Nash Ambassadors are, however, among the best performing cars made in America and in hill-climbing they take a back seat to none. I have a special test road in New Jersey that's a real back-breaker. The [*Continued on page* 143]

SPECIFICATIONS

MODEL TESTED:
1952 Nash Ambassador four-door sedan

ENGINE:
6 cylinder, OHV; bore 3.50 inches, stroke 4.38 inches; maximum torque 220 foot pounds @ 1600 rpm; brake horsepower 120 @ 3700 rpm; piston displacement 252.6 cubic inches; compression ratio 7.3 to 1

DIMENSIONS:
Wheelbase 121.3 inches; overall length 209¼ inches; tread 55⅝ inches front, 60½ rear; width 78 inches; height 62¼ inches; weight 3,480 pounds; standard tire size 7.10x15; gas tank 20 gals

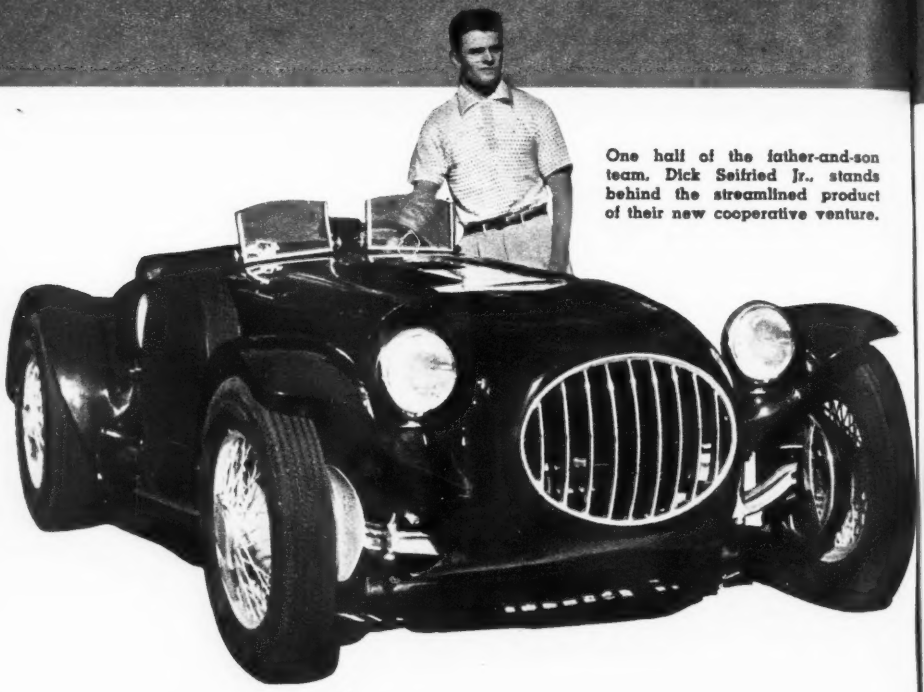
PERFORMANCE:
0 to 30 mph, 4.9 seconds
0 to 50 mph, 10.8 seconds
0 to 60 mph, 15.9 seconds
0 to 70 mph, 20.2 seconds
Top speed, 96-98 mph

SPEEDOMETER ERROR:
At 60 mph on speedometer, actual speed 59.23 mph

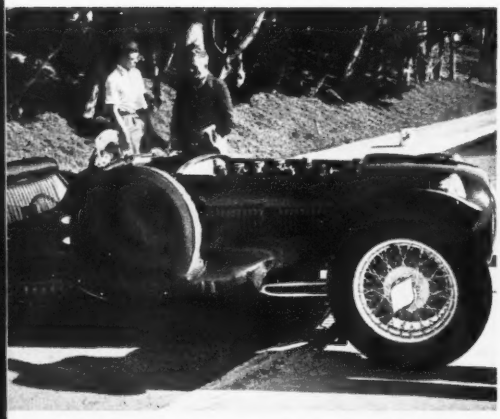
"The best-looking Nash in the company's history" is Uncle Tom's opinion of the Ambassador, which was a compromise between ultra-radical Continental styling and the American preference for lots of room.

COVER STORY

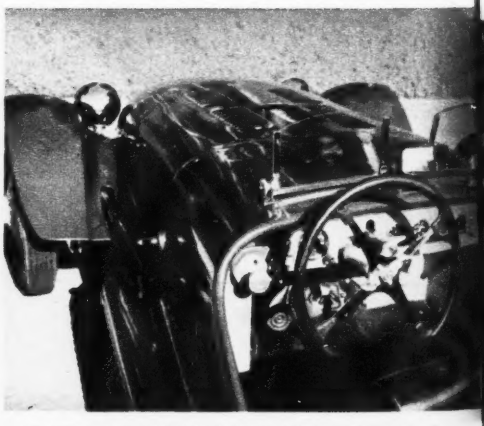
140-MPH Sports-Rod



One half of the father-and-son team, Dick Seifried Jr., stands behind the streamlined product of their new cooperative venture.



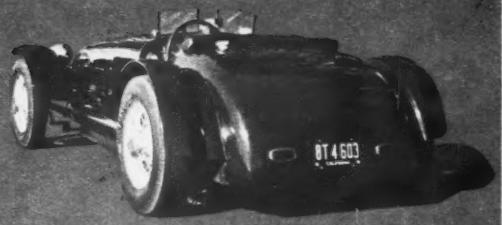
Side view of the 140-mph sports-rod shows small door, to comply with sports-car club rules, and competition windshields. That's Pop with Junior.



Instrument panel holds (left to right) gas tank hand air-pressure pump, tach, oil pressure gauge, water temp. gauge, ammeter, gas tank air-pressure gauge.

Combine a sleek European sports car with a speedy American hot rod and you've got the Seifried Special—one of the country's first sports-rods.

By Dick Snider



NOW that the ultimate has very nearly been reached in hot-rod *performance*, more and more young backyard engineers probably will be turning their efforts toward improving hot-rod *design*. Built at an approximate cost of $2,600 the Seifried Special is one of the first practical and successful transitions between the hot rod and the sleek European sports car. It's practical in that its design embodies economy of operation and handling characteristics suitable for the highway or the track, and it's successful as evidenced by the impressive records it has made.

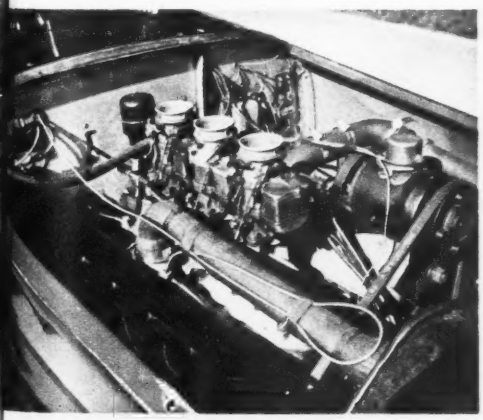
At the El Segundo, Calif., trials, the Seifried Special proved its accelerating superiority over Allards and Jaguars which competed by doing the standing quarter-mile in 14.88 seconds. It reached a top speed of 104 mph in the standing quarter at Santa Anna, Calif. The car is capable of a top of 140 mph on a measured mile.

At Carrell Speedway, the sports-rod was entered in a dirt-track sports-car race and literally stole all of the honors. Bob Path drove the car to qualify the fastest, win the Helmet Dash and place first in the main event.

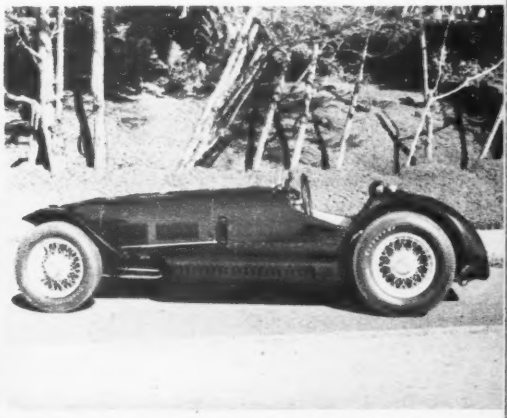
The Seifried Special was built by a father-and-son team. Richard Seifried Jr. designed and built the tubular frame and chassis and helped his father fashion by hand the all-aluminum body.

The engine room is fitted with a souped-up Mercury V8 with displacement of 296 cubic inches and putting out 190 bhp at 5200 rpm. A 1924 Franklin steering gear unit was used because of its 8 to 1 ratio. Overall height is 36 inches, giving the car an extremely low center of gravity with a maximum weight of 2,030 pounds. The paint job is a 12-coat lacquer, hand-rubbed, "Chariot Red."

Future builders of custom sports cars will do well to take a long look at the Seifried car before they start building. As a matter of fact, the Seifrieds have already begun the Seifried Special II, making good use of the experience gained with their first sports-rod. •

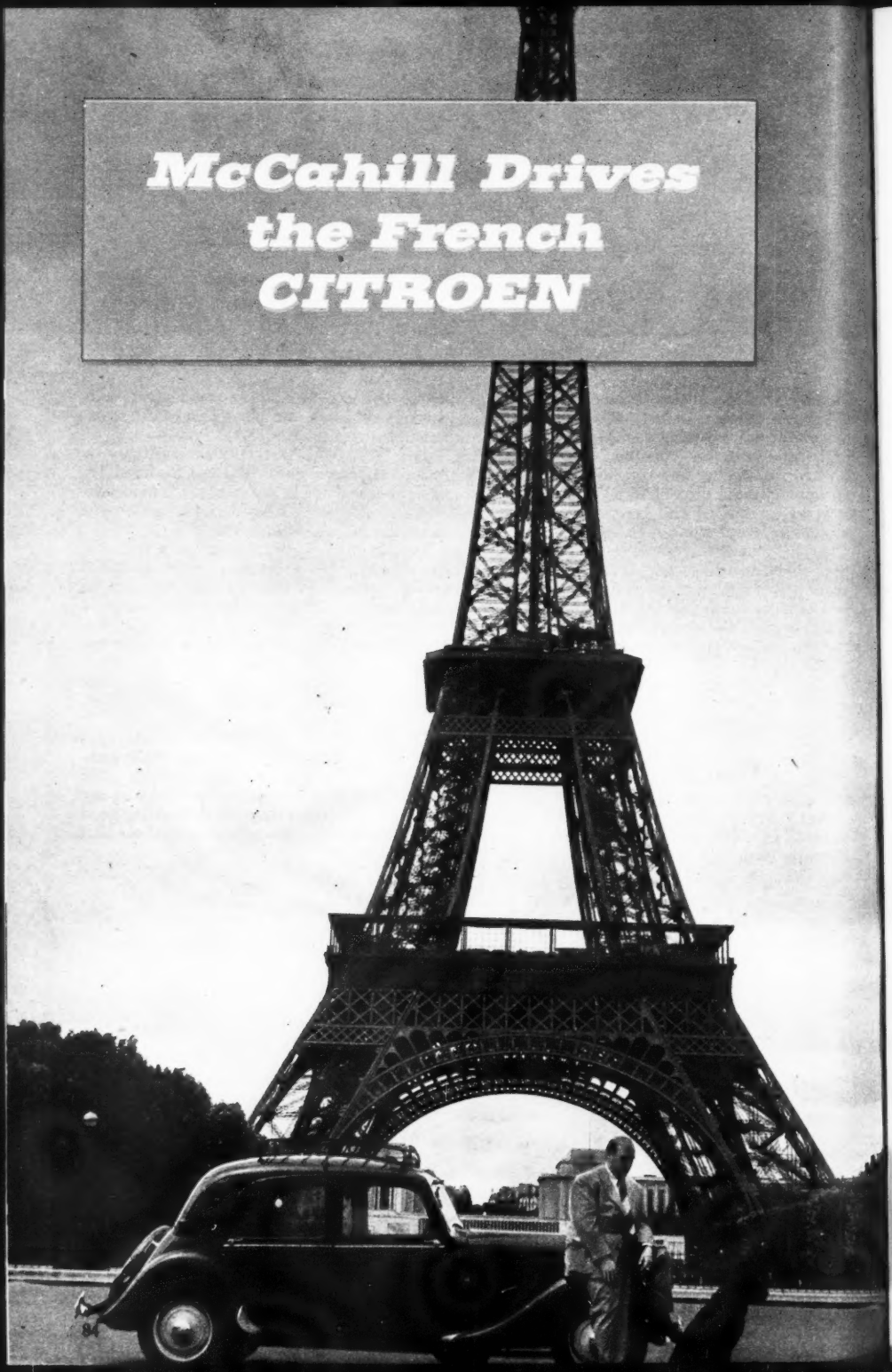


Close up of engine room reveals three Stromberg 97 carburetors, Offenhauser heads (10 to 1 compression ratio) and Potvin ignition and cam.



Overall height of this speedster is only 36 inches and weight is 2,030 pounds. It has standard Ford front axle, Pitman arm and chromed drag link.

McCahill Drives the French CITROEN



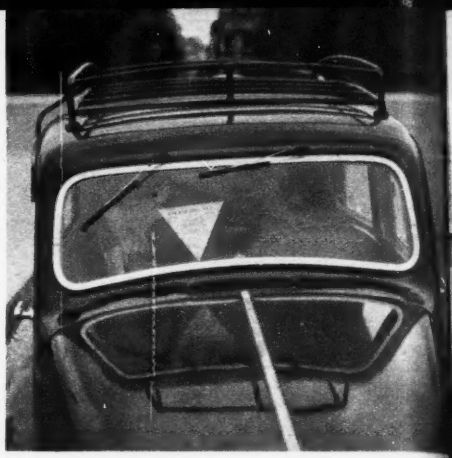
Seven-inch road clearance and low body, typical of front-wheel-drive cars, make Citroen a highway-hugger.

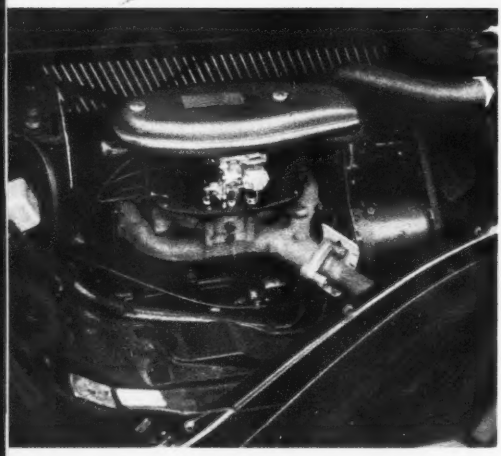
Product of the only successful big-time maker of front-wheel-drive cars, Citroen has many good points and a few bad ones, our Uncle Tom learns.

FRANCE is where De Dion got his rear end, Bugatti got his bugs and Citroen got millions of cars on the road. The French Citroen is as much a part of French driving as the roads themselves and, aside from the much smaller Renaults, Citroens on the highways of France are as common as Cadillacs in Miami Beach in February.

Citroen is the only successful big-scale builder of front-wheel-drive cars in the world. They have won a name for themselves in tough Alpine countries and on long fast stretches where the speed limit is entirely dependent on how fast your engine can turn the rear wheels. The 6-cylinder Citroen, known as the 15 because that's its rated horsepower (no relation to America's developed hp), is a real wildcat that can get down the highway at 90 with ease and over mountain tops with the agility of an eagle with its tail on fire. Its kid brother, the 11-hp, 4-cylinder job is quite an automobile, too, can out-dig most of the small sedans in Europe and climbs mountains and holds the road on hairpin turns like a squirrel looping around a redwood tree.

A l'ombre de la tour Eifel, l'Oncle Tom pense à la nouvelle Citroen tandis que le cousin Joe pense aux bouches d'incendie parisiennes. Savvy?





Tom liked the large cowl vent, forward-opening windshield and manual spark control on the dash, top. Citroen's 4-cylinder, overhead-valve mill has 117-inch displacement, pushes car at 76-78 mph.

Rooftop luggage rack above is a must for long-distance traveling in the small Citroen. Method of hinging trunk lid with spare wheel attached, old in Europe, is gaining popularity in the U.S.

For years I have been getting favorable reports on the Citroen but have never really had a chance to test one. So when I went to France for the Le Mans race this year, I decided to rent a 4-cylinder Citroen, provided I could get one brand-new to bring you a test on it from scratch. The AAA arranged for me to have one delivered from the factory with only seven kilometres on the clock. It would have been cheaper for me to buy one and re-sell it but I didn't have the extra $1,400 fish to lay out, which is what they cost.

Anyhow, with my trusty Citroen's rooftop baggage rack loaded with 400 pounds of luggage, and the inside filled with myself, my wife and French poodle-hating Joe, we headed out of Paris for Le Mans some 130 miles away. In the days that followed, I raced this little bucket around the Le Mans course by the hour, literally creaming the Hillman Minx and Peugeot set.

This rig has an overhead-valve, 4-cylinder engine with a cubic-inch displacement of 117 inches, developing 56 horsepower at 3800 rpm. It is a four-door sedan, slung as low as a snake with plenty of road clearance, usually true of front-wheel-drive cars. I was unable to find out in my best grade school French what the torque was but for its size it was loaded. I was getting down the Le Mans straightaway at 76 to 78 honest miles an hour. And in the corners I was able to stay with nearly all the practicing race cars. To get

And here is Uncle Tom parked in front of the Cunningham team's racing pits at Le Mans, France, a few days before the big 24-hour race in which one of the three American cars finished fourth.

around a corner fast, all you do is shove the throttle through the fire wall and hold on. All front-wheel-drive cars have a peculiar characteristic, however, which gives them a real sporty touch.

They will out-corner anything in the world—up to a point. When that point is reached, get ready to duck! The front or power wheels always get around but if the rear wheels lose their road grip and break away, many interesting things can take place. If this happens on wet pavement at an intersection you may find the rear wheels taking the low road while the front wheels take the high. If a thoughtless tree should get in the way, it is quite possible for the front wheels to touch the back of the rear wheels [*Continued on page* 142]

SPECIFICATIONS

MODEL TESTED:

1952 French Citroen four-door sedan

ENGINE:

4 cylinder, OHV; bore 3.07 inches, stroke 3.94 inches; piston displacement 117 cubic inches; brake horsepower 56 @ 3800 rpm; compression ratio 6.2 to 1

DIMENSIONS:

Wheelbase 114½ inches; overall length 170 inches; tread 52¾ inches front, 52¾ rear; width 65 inches; height 60 inches; weight 2,196 pounds; standard tire size 4.00x16; gas tank 12 gals

PERFORMANCE:

0 to 30 mph, 6.8 seconds

0 to 50 mph, 14.8 seconds

0 to 60 mph, 21.7 seconds

Top speed, 76-78 mph

There's no shortage of them and they offer young fishermen a chance to whet their appetites on the real thing.

Don't Pan th

He's a tough fighter, delicious to eat and lives in your back yard! What more do you want?

By Raymond R. Camp
Rod and Gun Editor, N.Y. Times

THINK panfishing is limited to a barefoot boy with a willow pole and the traditional bent pin? Don't you believe it. You'll be surprised to learn that a lot of anglers who have taken giant tuna and record salmon make regular pilgrimages to insignificant lakes and ponds to indulge in the lowly sport of panfishing.

Some of these veterans, it is true, return to the small waters out of sentiment in an effort to recapture childhood's fishing memories when a bluegill was a real reward and a perch an event. The memory revival is too often a dismal failure but the fishing itself proves to be interesting

Call 'em sunnies or pumpkinseeds, they all taste the same . . . good. Left is a bream; right, bluegill.

the Panfish

and when the angler pushes away from the table that night after disposing of a fair portion of his catch it occurs to him that *brook trout au fine herbs* at Pierre's have a hard time matching the flavor of what he has just eaten. And another panfish enthusiast returns to the fold.

I know a number of trout addicts who will drive 300 miles over a weekend to fish a popular stream that usually provides them with nothing more exciting than a half-dozen trout weighing from six to eight ounces. I know because I do it myself on occasion. But if I should tell one of these purists that I knew a small pond only ten minutes' drive from his home that would provide him with perch, crappies, rock bass and bream that scaled up to two pounds, he would look at me with disdain.

"Look, Bub," the answer would go, "I'm a TROUT fisherman."

Those characters always remind me of the man whose friend told him of a wonderful restaurant that just opened and which served "cocktail, soup, roast beef, salad, desert, coffee and a bottle of wine.

At left is a white perch, a popular panfish. Baby bass take flies, right. Unhook them carefully.

For the larger varieties use sturdier tackle such as a spinning outfit. Most panfish can't resist spinning lures.

You can spend many a pleasant day on a nearby panfish pond and you'll catch fish when trout and bass aren't feeding. This trout purist sneaked off to a hidden lake, was caught angling for a sunny.

all for 55 cents." He responded by inquiring, "a quart or a pint?" If I should tell our purist there were a few big trout in that panfish pond he would agree to try it but would insist on knowing "how big?"

A friend of mine, another of these single-purpose trout addicts, approached me not long ago and related a sad tale of woe. His efforts to interest his son in fly-casting were meeting with no success whatsoever.

"I sacrifice two or three hours a week showing him how to cast out on the lawn," he complained, "and he practices only when I insist. He just isn't interested."

"Look here," I pointed out. "Put yourself in the boy's shoes. Would you be interested in practicing casting on a lawn? This Saturday I'll take you and the boy to a little pond outside of town where there are plenty of perch and bluegills. And they'll take a fly. He may change his ideas if you combine casting with fishing."

The trip was a success in every way. The boy caught a lot of nice perch and after he had brought three or four to the boat the Old Man decided to borrow my fly rod and try the fishing himself. I was not at all surprised to find out last week that most of his recent fishing excursions have been very local. His wife is happier, too.

"He's been bringing home some fish that are really worth eating," she explained, "and Junior is now a confirmed fisherman."

In lumping the assorted so-called coarse fish under the common term, panfish, there is apt to be some confusion for the term originally covered any fish that could be cooked in its entirety in a small frying pan. Actually, some of these panfish prove rather bulky for even a large skillet. The walleye or pike perch, which is considered a panfish in most areas, has been known to attain a weight of 25 pounds. I have caught them as large as ten but even a ten pounder can't be squeezed into a single frying pan.

The panfish clan is a large and varied one. The larger members take in the small grass pike and pickerel, various catfish, carp, suckers, walleyes and the assorted small basses other than the largemouth and smallmouth. The lesser tribe embraces the miscellaneous sunfishes, bream, crappie, assorted perches, chub, shiners and mooneyes. Some of these species have a limited range but most of them are found in greater or lesser numbers in both northern and southern waters.

The lures and baits used in panfishing vary with different waters and the novice must base his methods on the results of trial and error or seek the advice of local fishermen. Flies and small streamers are effective on a number of the species but in some instances it may be necessary to resort to worms or even small minnows. In all forms of panfishing one factor is important—sharp hooks. A hook hone costs only a few cents but it will make a lot of difference in your fishing.

For their size, even the small panfish put up a remarkably vigorous battle when hooked, which comes as something of a surprise to those anglers who have been deceived by the scorn of the haughty trout and bass fishermen. Personally, I am convinced there is [*Continued on page* 158]

Pailmaster is a galvanized pail with a zipper-topped Vinylite jacket insulated with Fiberglas. It keeps food hot or cold for 15 hours. Top seals out sand and dirt. The Niche, Dept. PM2, P.O.B. 333, Orange, N. J.

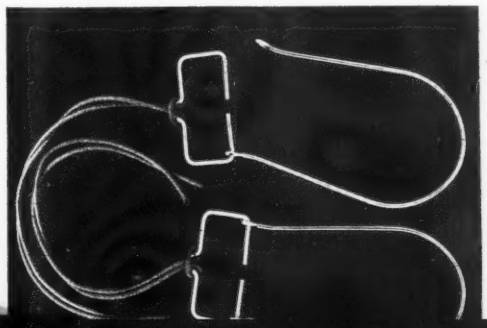
Glass Bow for archers is bonded from 2,500,000 tough strands, is virtually unbreakable. It can be released arrow-free, overdrawn or shot in cold weather without danger. Paul Bunyan Bait, Minneapolis.

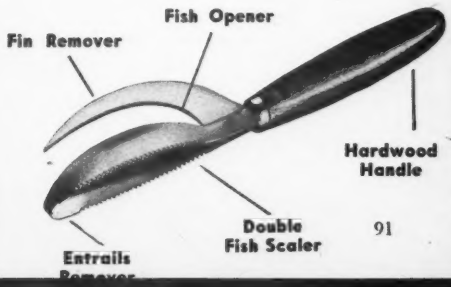
NEW for the SPORTSMAN

Lever-Matic shotgun has a 2½-inch lever travel for hunters who are used to deer rifles with similar actions, permits rapid fire. Holds three shells, is pressure tested. Kessler Arms, Silver Creek, N. Y.

Fish Carrier will hold onto your prize catch and get it home in good condition. It is cadmium-plated, rustproof, opens and closes like a safety pin. Insert through gill and mouth. P. D. E. Service, Brooklyn, N. Y.

Fish Cleaner is a complete tool in one handy unit. It is made of satin-finished Swedish stainless steel with hardwood handle in 8-inch length to fit any standard tackle box. Ernest Sales, Albert Lea, Minn.





All Snakes Are Yellow

If it makes you feel any better, rattlers are more frightened of you than you are of them.

By Tom McHugh

SNAKES are cowards. Give them half a chance and they'll run away from you.

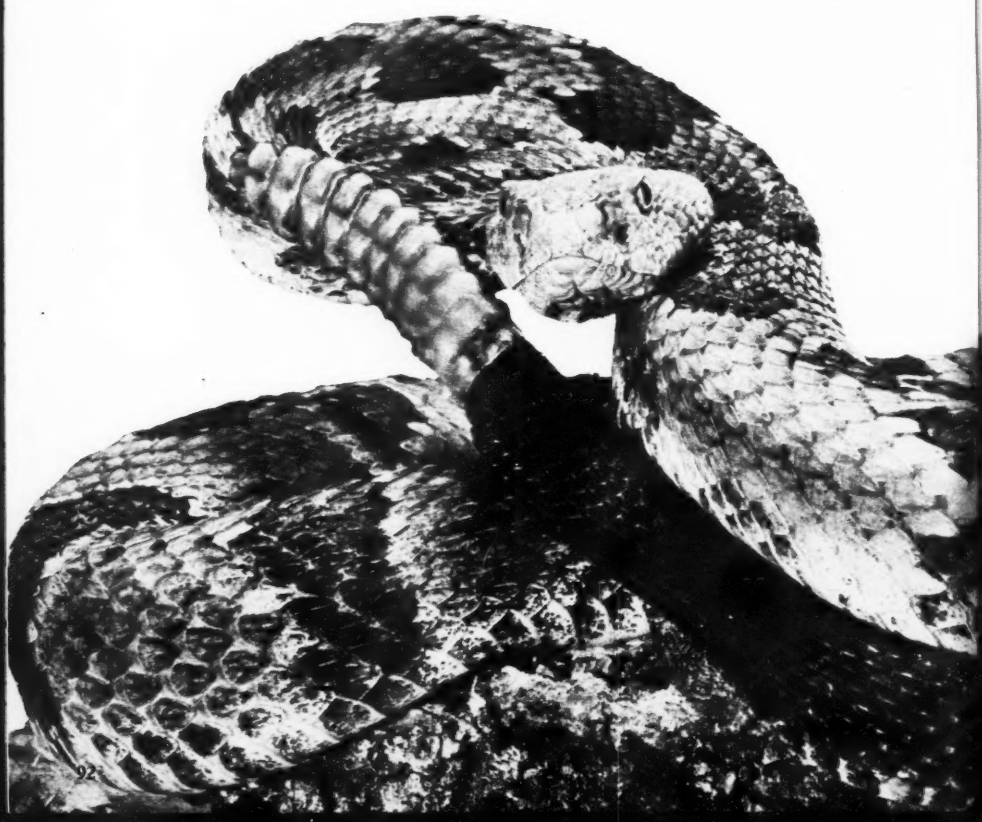
Why do they strike in the first place? Because they're scared of you. They're afraid you might step on them or kill them. Like any wild creature, they strike to protect themselves in the only way they know.

But, even if you are bitten, you have more than a 30 to 1 chance of recovering. Actually, you're much more apt to be struck by lightning than killed by a snake in this country.

Veteran snake hunter Chuck Naidl has collected poisonous snakes all over the United States, but none has ever attacked him without provocation. In fact, his main trouble is that too many run away from him.

Come along on a rattlesnake hunt with Chuck and see the real nature of this shy serpent. Our hunt leads us into the snake-den country of central Wisconsin, where rattlers gather in the fall before going into hibernation.

Of course, there are the necessary warnings before we start out. "Watch out for black widow spiders," Chuck cautions. "They like to hide out in the dark cracks

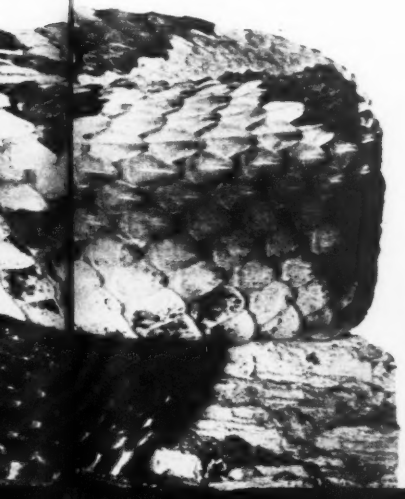


In the snake pit of his reptile institute, right, Ross Allen prepares to milk a rattlesnake while spectators watch at the Ocala, Fla., showcase. The venom is dehydrated before being shipped.

With his special snake tongs, far right, Chuck Naidl seizes a squirming rattler which tries to strike out in self defense. A moment later, the snake was safely inside the bag hanging from his belt.

In order to prove that a person bitten by a rattlesnake doesn't need anti-venom serum, Bernie Wendt, right, co-owner of a reptile farm near Denver, allowed a rattlesnake to bite him on the arm.

As a nurse applies a suction cup to the wounds to suck out the poisons, far right, a policeman waits to drive Wendt to a doctor, just in case. But next day Wendt reported he felt perfectly healthy.



Down the hatch! Here, a rattlesnake swallows a rat whole after first poisoning him with deadly venom. Since the rattlers feed mainly on destructive rodents, they are actually of use to the farmers.

Once every month, rattlesnakes shed their fangs, left, but the new ones are always ready to move in. At right, Naidl milks venom from a rattler while his wife-assistant quiets the squirming body.

among the rocks of these snake dens. And poison ivy is always a nuisance—it grows over the rocks."

The den itself is a rather unimpressive looking pile of rocks stretching about as far as the average living room. The surface view is deceiving, however, for under the boulders stretch many feet of narrow crevices—tunnels that lead deep underground to give the snakes adequate protection against being frozen to death in winter.

As we creep over the rocks Chuck fires one last warning: "Watch out where you put your hands!"

Won't the snakes rattle as soon as they see us, thus warning us?

"Unfortunately not," Chuck answers. "If they did, it would make snake hunting one of the easiest professions in the world. As it is, about half of them lie absolutely still. I had a vivid example of how quiet they can remain while I was hunting diamondback rattlers in the Everglades. I was poking through the brush while my helper followed a few feet back to pick up any snakes that I missed. Suddenly my helper shouted as he lifted a big rattler off the ground. And where did he find it? Quietly coiled right next to one of my footprints! I had almost stepped on this snake, yet it never made a sound. Many rattlers would just as soon remain undetected. They think that you won't see them if they lie perfectly still. That happens frequently, for they are so well camouflaged that they blend right in with the leaves on which they like to lie."

Then, it would be quite possible for a man to step on one of these quiet snakes and be bitten before the snake ever had a chance to rattle.

"That's very true, so let me repeat: Be careful where you put your hands and your feet!"

Beginning to get the feeling that we are not alone on the rocks? Somewhere, perhaps, there is a pair of small, beady eyes watching our every move.

If only *half* of them lie still, what about the rest of them? What do *they* do when they see you?

"Most of them run away as soon as they spot you," Chuck says. "They're just as anxious to get away from you as you are from them. Occasionally, one will *think* he's cornered, even though he actually may not be. Then, he'll rear back into striking position and rattle. Give him a chance, though, and he'll scoot for cover."

No sooner does he say this than the dry whir of a rattler surprises us. Five feet ahead a large timber rattlesnake lies coiled. The front part of his body is held up in an S-curve, while the rest is anchored on the ground.

"Watch that S-curve!" Chuck warns. "That's the part that straightens out in a lightning-fast jab. At most, the snake strikes about half his length in delivering an accurately aimed blow. Usually it's less than that."

As we watch the snake ahead of us, its neck still remains in that S-curve, but the rest of its coil slowly begins shifting. The snake is moving away from us in what Army men would call a strategic withdrawal. With its coiled neck it is always

on the defensive, yet it still slowly edges away from us.

Just before it has a chance to slip under a nearby boulder, Chuck rushes in with his snake tongs. In a flash, the squirming four feet of snake is up in the air in the grip of the tongs and then into the confinement of a sugar bag.

Once home again, Chuck milks the snake of its venom. The dried venom will later be used to make anti-snake-bite serum. The snake itself may be put on display in Chuck's reptile farm, sold to a zoo or made into a very durable belt.

Rattlesnakes use their poisons mainly to kill their own food and in that they are very proficient.

The action of a rattler striking its food prey is so rapid that the human eye can scarcely follow it. Just a few seconds afterwards, the venom starts working. Since the victim is relatively small, death comes rapidly within about two minutes. No cleaner method of killing is known in the animal world. The rattler now crawls to its meal, inspects it carefully and then starts to engulf it in one piece.

Poisonous snakes have proven themselves very beneficial to man. Because they are such consistent rodent-eaters, they are powerful allies in the continual war that man must wage against these pests. Snakes are actually worth many dollars apiece each year to farmers since they prevent the increase of ground squirrels, gophers, prairie dogs and mice.

Rattlesnake venom kills these rodents quickly and efficiently, yet its action on humans is much slower and less deadly. Snake bites are rarely fatal if modern treatment is used. But there will be little need for you to worry about snake bites if you follow a few simple rules. Once you make these precautions habitual, you can feel at ease in snake-infested areas.

If you go into a new part of the country to work, camp or hunt, get advance information about local poisonous snakes. Often somebody in a nearby town knows reptiles—the high school biology teacher is a good person to ask. Find out what poisonous snakes there are, what they look like and where they live. For example, in the Southeast the water moccasin likes swamps and sluggish waterways, while in the Northeast the timber rattlesnake prefers rocky areas.

And what should you do if you suddenly hear a snake rattle? Freeze immediately until you find the snake. If you're not within striking distance, back slowly away. But if the snake is very close, remain still and let *it* retreat.

Don't fear the snake that you spot, for it easily can be avoided. But beware the snake that you approach too closely and *don't* see. It will defend itself simply because it thinks you are attacking it. To avoid such an occurrence, heed this rule:

Watch where you place your hands and feet!

It sounds simple enough, yet the fact that 98 per cent of all bites occur below the knee or elbow shows that few victims observe this warning. As you walk through meadow or forest, watch a strip of land ahead of you. When you come to a log, don't step *over* it since there may be a snake coiled on the other side. Step *up* on the log, look on the other side, then step down.

You may think that a leather boot will protect you completely, but that isn't always the case. A well-aimed strike may penetrate the average thickness of leather. The thin tongue of a boot is especially vulnerable. For added safety, quail hunters in the South use a boot lined with layers of canvas, and snake hunters get absolute protection from boots with extra thick leather that is lined with wire mesh or aluminum. But you needn't go to this much trouble. Leather leggings worn over leather shoes will give good protection. Wear your pant legs outside your boots—the extra cloth will deflect or confuse the strike of the snake.

When you camp out, snakes may crawl under your sleeping bag merely to keep warm. All popular opinion to the contrary, a rope around your camp will do nothing more than scratch the snake as he crawls over it. The best protection is a mosquito bar hung over your sleeping bag with the edges carefully tucked under. If you have no mosquito bar, avoid pitching camp near swampy areas or rocky ledges.

If you slay a snake, don't forget that "dead" snakes, like "empty" guns, sometimes kill. Naidl had a very vivid demonstration of this when he was preparing a rattlesnake for supper. The head, even though severed from the body, was still full of reflex action. The jaws would open and the fangs would flash out when anything came close. The body, meanwhile, was doing its bit. Even after being skinned, it managed to crawl off the table. Whenever it was touched, the decapitated neck would swing around to strike.

As a precaution for field travel in snake country, always carry a snake-bite kit. You can buy one from your druggist or camping outfitter for about three dollars. This compact kit carries the essentials for first aid for snake bite. But that emergency probably won't arise if you know the habits of snakes and take proper precautions.

You'll never have any trouble, though, if only you remember—snakes are more afraid of you than you are of them. •

Deuces Wild

[*Continued from page* 67]

Once some couples start having twins, they don't seem to be able to stop. The wife of a New York mail carrier has had four "special delivery" pairs in ten years. An ex-Wac of Akron, Ohio, was flabbergasted when she bore her third set in 27 months. A man and wife living in Quincy, Massachusetts, each of whom had a grandmother who was a twin, registered three duos in less than two years.

An American record was established by the birth of six sets of twins to Mr. and Mrs. Harry Fifield of Putnam, Connecticut. Mr. Fifield was employed on a Roosevelt federal works program when the last pair arrived, so he named them Franklin and Eleanor.

Observation of birth-mates by psychologists has tended to prove that heredity is a much stronger force than environment in developing an individual's personality. Long-range studies by the University of Chicago, the University of California, the New York State Psychiatric Institute and other organizations have turned up some amazing instances of twin behavorism.

One set of identicals, separated by thousands of miles and without communicating with each other, committed suicide at precisely the same hour on the same day by the same method—drowning.

The coincidence of the broken arms suffered by Mary and Marilyn Eisengruber is by no means uncommon. Many twins go along enjoying good health for many years and then are laid low simultaneously by an identical illness or injury.

Not long ago a 60-year-old man stepped in front of a speeding car on a street in Buffalo, New York, and was killed. Half an hour later his twin brother died under the wheels of an auto at an intersection in Sydney, Australia.

Twin sisters born in the Middle West were separated at the age of 18. One married a farmer, the other became a city career woman. At 65 both became deaf, at 70 both became blind. When they were 85 each was fatally strickened by a cerebral hemorrhage.

A pair of French twins, living 50 miles apart, reported having identical dreams night after night. Then there were the English twins who wanted to give each other a fine birthday present. When the gifts were unwrapped, they turned out to be identical sets of champagne glasses.

Two young women who sprang from the same cell but were separated in infancy and never knew of each other's existence were brought together in an Indiana city a few years ago. They were like the traditional peas-in-a-pod, having identical tastes in men, diversion and dress. And each worked as a receptionist in a doctor's office.

Another set of identicals separated as babies were Edward Iske and Fred Nestor, the latter taking the name of his foster parents. After several decades they met and compared notes. Both had married small-town Michigan girls who were blonde and petite, both had become fathers of sons at the same time, both had acquired the same kinds of dogs as pets.

"I'm an electrical engineer," Edward declared.

"So am I," echoed Fred.

Movie, vaudeville and TV audiences have been entertained by a long succession of twins who have entered show business. Magazine and newspaper readers have been entranced by photos of twin models gracing ads for various products. But, conversely, motorists have been driven batty by twin traffic cops, boozers by twin bartenders, and Veterans Administration officers by a couple of guys named Laughn W. Massey and Vaughn W. Massey.

The Massey look-alikes came out of Choudrant, Louisiana, to enter the Army on the same day. They drew serial numbers just two digits apart, trained at the same camp, went to Europe on the same ship, served in the same unit in France.

Laughn became a corporal. Ditto, Vaughn. Laughn was assigned to drive a truck. Ditto, Vaughn. Laughn got hit by shrapnel. Ditto, Vaughn. They went to the same hospital, were discharged from the service the same day and went back home to work for the same paper company.

The VA officers had to look over the Masseys in person to make sure there actually were two of them. Only then did they okay two separate and distinct claims for disability. One for Laughn. Ditto, Vaughn.

The longevity record for U. S. twins was set by Mrs. Jeanette Laucheimer of New York and Mrs. Henrietta Dannebaum of Philadelphia, each of whom died in her 99th year in 1933. Numerous pairs of oldsters turn up at twin conventions held from time to time in various parts of the country.

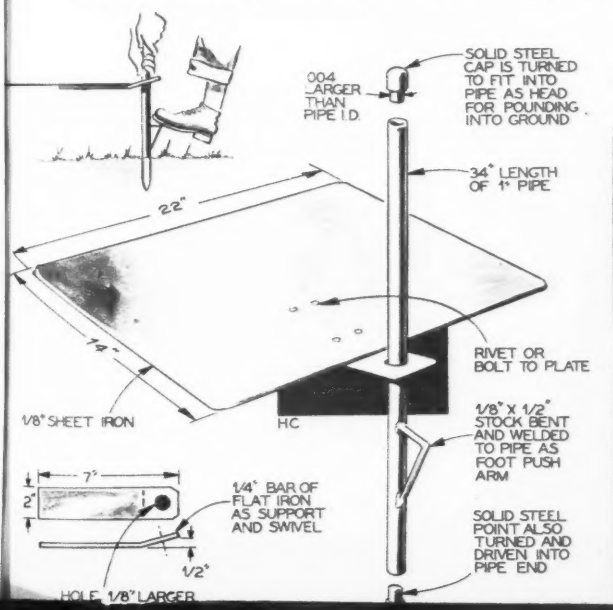
As a general rule, though, the look-alikes have a poorer chance for survival than single-born babies. The infant mortality runs considerably higher in their ranks. This is one reason why people still ask whether there's a jinx on twins.

There are many other causes for thinking duos may carry a whammy. The psycholo-

[*Continued on page* 141]

CAMP COOKER

BASED on the simple principle of leverage, this ingenious rig serves as a griddle, grill, or stove. You'll find that it's much more practical than most commercial units that cost many times the price of the components. One word of warning: don't use material less than ⅛ in. thick for the cooking surface, for it will have a tendency to buckle. Construction data is shown in diagram below.—*Paul Hosmer* •



To use as griddle, lower sheet iron surface as in above photo. Below: sturdy unit will support pots, too.

Front view of the MI Hunting Lodge is a picture of rustic beauty and practicality.

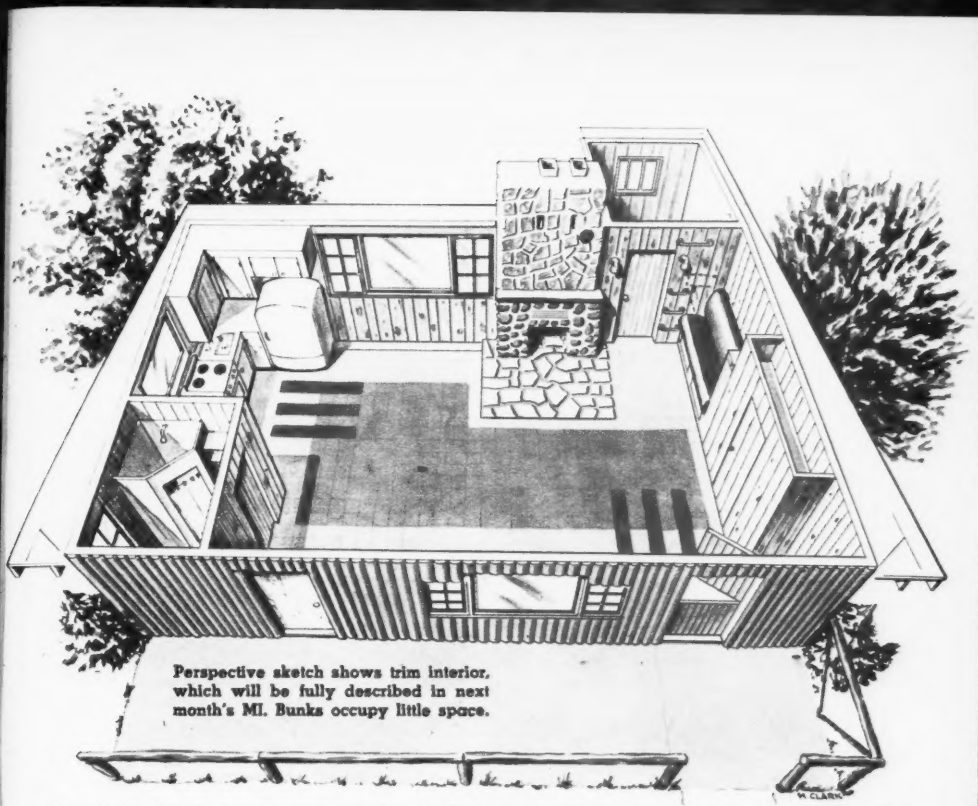
M.I.'s Vacation Home

By Jane and Woodrow Jarvis

Our authors are a New York man-and-wife newspaper team. Both took leaves of absence from United Press to build the MI Hunting Lodge, and both were completely inexperienced in construction know-how when they started. Here is their story.

WE built the MECHANIX ILLUSTRATED hunting lodge near the end of a road leading nowhere in the northern Michigan wilderness. The site is at Spring Bay, three miles north of isolated DeTour village, on the broad St. Mary's River looking northeastward into Canada. The island-studded river lies 35 feet from our breakfast table.

We picked Spring Bay for its abundance of game and its beautiful scenery, but it has its price. We are at the 46th parallel and the winters are long and cold. We built for year-round occupancy, for comfort when howling blizzards blot out the land and the temperature

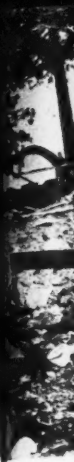


Perspective sketch shows trim interior, which will be fully described in next month's MI. Bunks occupy little space.

Lodge looks like this from rear entrance. King-size fireplace is for protection against rugged Michigan winters.

1. Although there was a small natural clearing on the site, a number of trees had to be felled and the dense underbrush had to be removed. The St. Mary's River may be seen in the background.

2. After one neighbor came to the rescue in a bulldozer, another friend leveled off the 35 yards of gravel fill with his grader, and then roughed out what would eventually be the septic tank pit.



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5. Porch section was poured 2½ in. lower than main floor to prevent water seepage and to allow room for outside finish to come below floor level. This overlap renders floor weathertight.

6. Final excavating job was fireplace pit. Frost line in northern Michigan is 4 ft., so to prevent concrete from heaving, the pit was dug 4 ft. deep under the fireplace proper, 2 ft. under the hearth.

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plunges to about 40 below. Costs were higher because of these factors, but they could be reduced in a milder climate or if you build for summer occupancy only.

Fortune smiled on us in the matter of tools. The land we liked so well at Spring Bay was owned by a friend of many years, John Steel. Steel abandoned the high-powered life and made off for the north woods. Over a period of years he accumulated quite an imposing array of power machinery—bulldozer, truck, Jeep and trailer, Shopsmith, electric hand saw—in order to develop his wilderness holdings. These tools Steel let us use, and many other smaller ones, without charge.

But tools still are an item, or were for us. We arrived on the site with a New York apartment-size tool kit containing one pair of pliers, three screwdrivers and a tack hammer. We bought $48.15 worth of small tools and a $25 half-interest in a ½-in. power drill. From our experience we found that the one tool which will pay for itself quickly is the electric hand saw. Get one with a bevel adjustment for cuts up to 45° with a 2-in. bite. It will cost around $50. With this you can rip through work with

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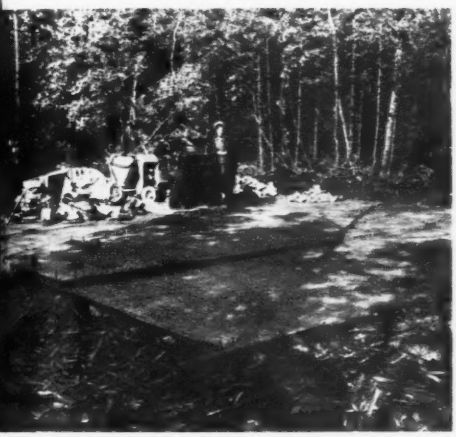
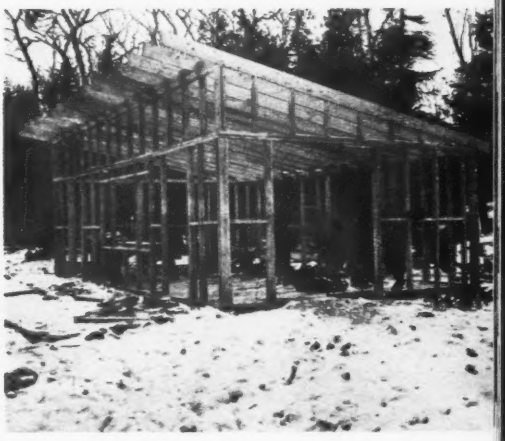
3. Batter boards set near corners of project aid laying out foundation. Four weighted lines laid over boards outline foundation. Diagonals will be equal in length when all four corners are square.

4. First permanent installation was electric power. Meter and temporary fuse box were attached to pole. Once these were in, a shallow-well jet pump was rigged to draw water from river 35 ft. away.



7. Here's the completed slab. Note the anchor bolts inserted in the concrete. These will retain the sills on which the floor joists will ultimately rest. Rocks for the fireplace interior were gathered locally.

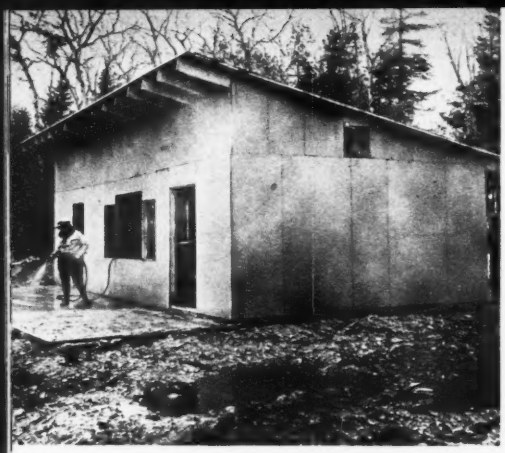


8. Framework went up quickly. Rafters are set on 24-in. centers to accommodate 4x8-ft. insulation boards. Archway through closet wall was left as possible expansion area in the future.

the speed of a startled deer. You probably can rent or hire the larger power machines, including the cement mixer.

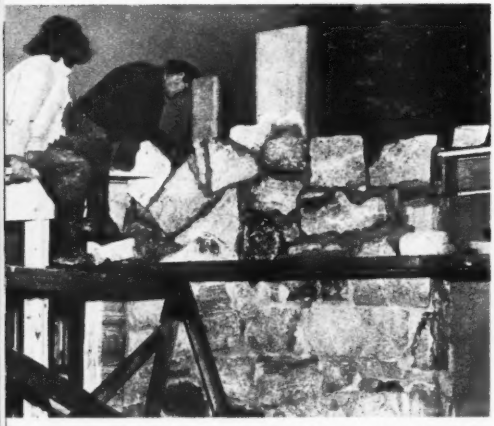
Don't ask how many man-hours went into the place. Records became confused early in the game. We built it all with our own work or volunteer help. Part of the time the crew included three women, and it would take a brave man to venture how many squaw hours make a man-hour. Then again, Steel would drop in with his bulldozer and move more stuff in 10 minutes than we could have moved in 10 days. Every time Steel came calling with his 'dozer he made us a new driveway, which is no inconsiderable item. We have three driveways. Other friends also dropped by to help out for a day or an afternoon. On the other hand, a fisherman occasionally would pass the word where the lunkers were striking, which brought things to a screaming stop for the day.

There were no holdups for materials and we did not run into any serious shortages. One of the most intelligent things we did was to strike up an agreement with the local hardware store in DeTour. We concentrated our purchases in one place. In return,



9. Rigid insulation boards ½ in. thick comprised sheathing. Temporary stovepipe outlet in wall at right was made so that builders could work on interior of lodge during the cold weather.

10. It required just one day's work to put on the roof shingles. Never underestimate the power of your friends if you're planning to undertake an extensive project like construction of this lodge.



11. Main flue liner in fireplace is 8x12 in. Additional 8x8-in. unit may act as stovepipe outlet—a handy kink to remember if you build in a cold climate and want to use lodge during the winter.

12. The structure begins to take on a finished appearance after roof and fireplace are completed. Part 2 of this story, which is scheduled to appear in October MI, describes lodge to its completion.

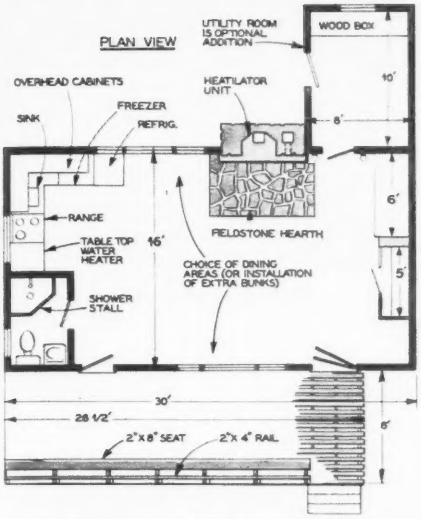
the hardware man classified us as contractors for our own home and therefore entitled us to a 10 per cent discount across the board. Somehow we gathered the impression that this was not an unusual practice around the country. It saved us $100 on about $1,000 worth of builders' supplies. In addition it assured us of obtaining borderline scarcity items such as galvanized pipe, fittings and cement.

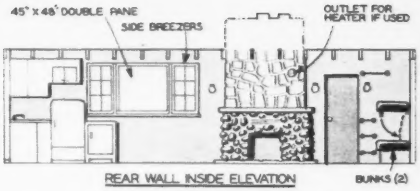
The hunting lodge fell naturally into four stages of construction: (1) foundation and fireplace, (2) framing and housing in, (3) installation of utilities, and (4) interior finish. You can move in at the end of the second stage when your total cost is about $1,200 in materials, and spread the finishing details over as many months or years as your inclination and pocketbook dictate. Our final cost ran $2,500, exclusive of land and without labor.

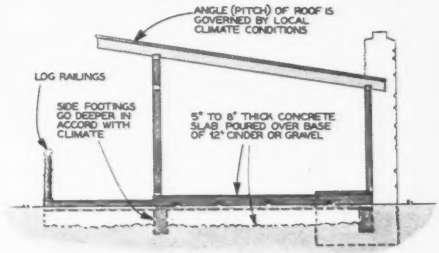
Foundation and flooring is a matter of personal pref- [*Continued on page* 148]

LARGE-SCALE PLANS

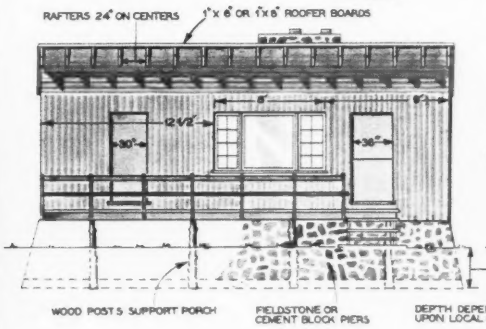
in a limited number will be available for this project next month. To reserve your copy, remit $5.00 to MECHANIX ILLUSTRATED Plans Service, Fawcett Building, Greenwich, Conn. Please specify Plan No. HJ-21.

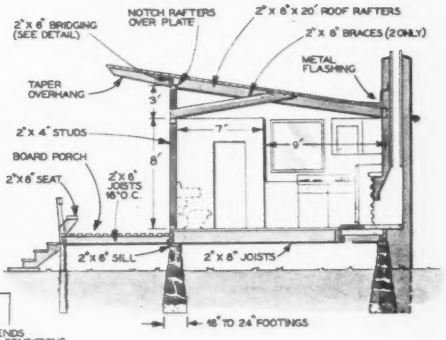




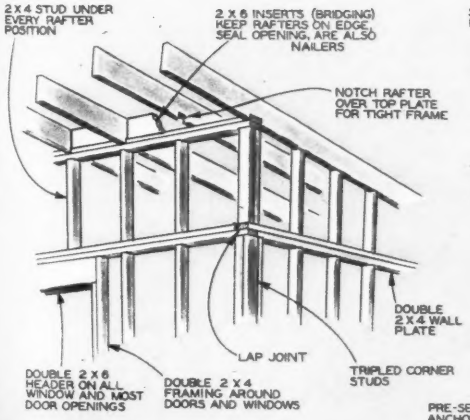


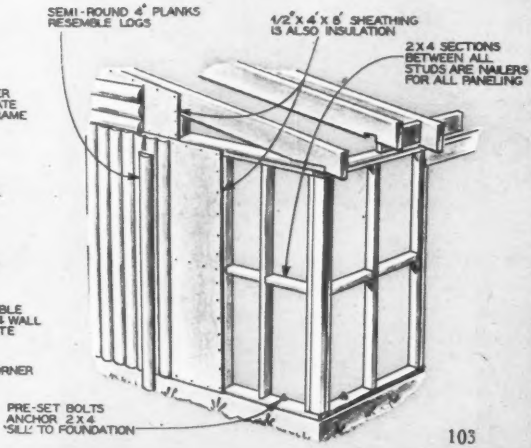
ALTERNATE FOUNDATION IS SOLID CONCRETE SLAB WHICH ELIMINATES FOOTINGS, PIERS, JOISTS AND FLOORING





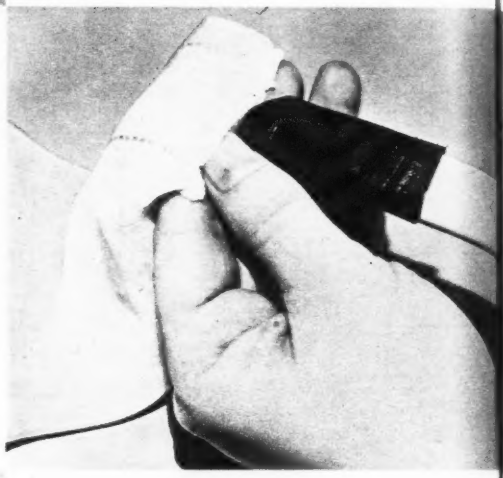
Details of Construction





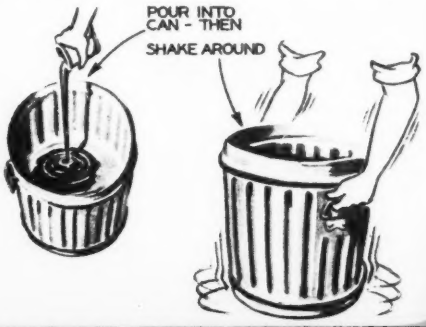
Decorate book matches with wallpaper border. Paste scraps left over from a decorating job onto covers of folders and then trim edges as shown at left. The results are novelties that match room's decor.

Snagproof curtain rod. Curtains made from even the most delicate fabric will not snag or rip when being slid on a curtain rod if you but take the time to cut one of the fingers from an old glove and slip it over one end of the rod (right) as a protective sheath.



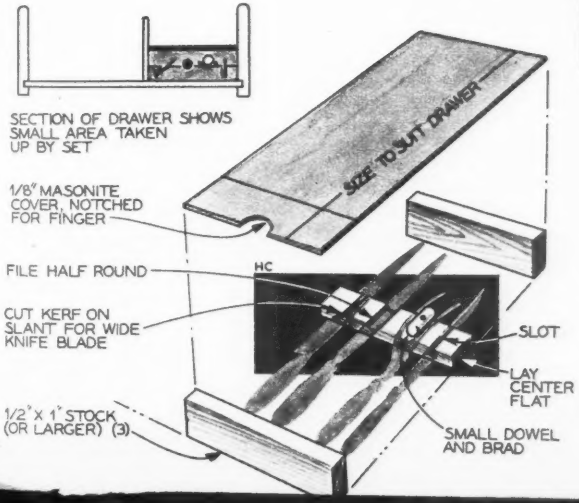
Ventilate your garage. A steel louver with a built-in screen costs very little and is easy to install. In the summer, when the temperature under the roof of an unventilated garage can reach 130°, you'll appreciate your louver, for stuff stored near the rafters will last longer.

Garbage cans will remain usable much longer if their bottoms are coated with a heavy roof paint (below) to prevent rusting and abrasion. Before painting, can must be perfectly dry. Pour in enough paint to cover bottom, rock back and forth to seal edges, then spread paint with brush.

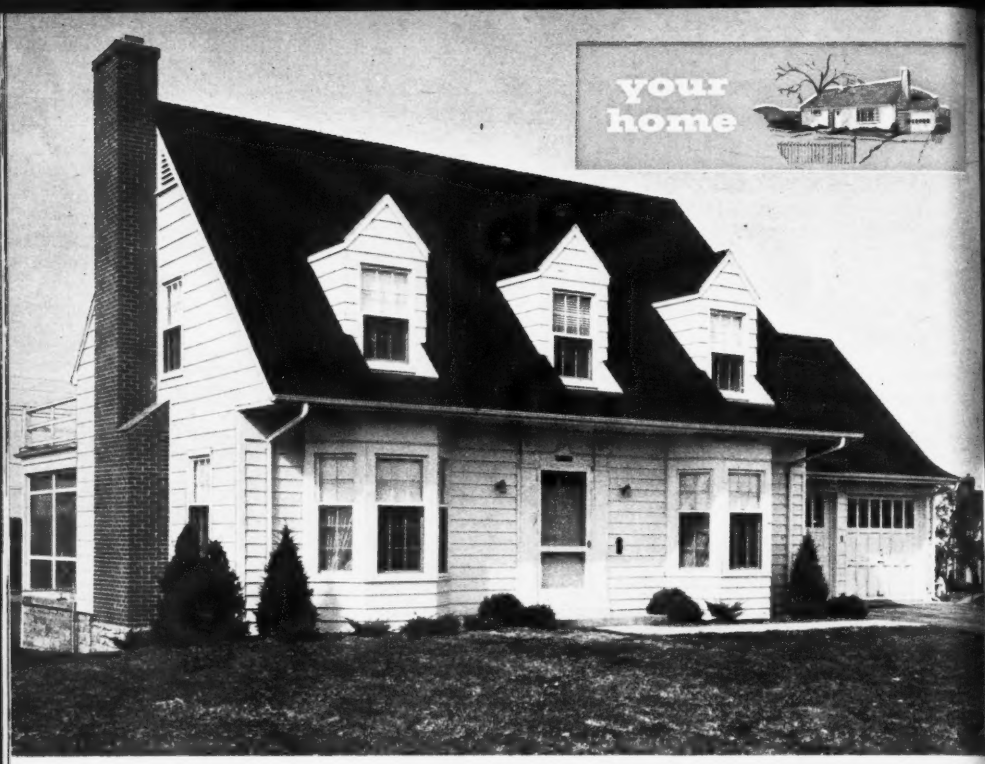


Make a screw eye for emergency use from a screw hook by bending the hook around a rod that's about the right diameter. Use a pair of pliers to bend the hook. Before bending, cut the tip from the hook as shown in the sketch reproduced at right.

Small rubber pads, which are cemented to the bottoms of such articles as ash trays and cigarette boxes to protect table tops, can be made with a paper punch. Split and flatten a piece of rubber tubing and then punch out the pads as shown below.



Store your carving set in a buffet drawer. Rest knife blades in saw kerfs cut in a block of wood. Place the steel in a half-round dado. Tie down the fork tines with a pivoting piece of dowel. The removable Masonite cover is notched at one end for a finger hold.



Does Your Home Need A Paint Job?

If it does, these painters will show you how to tackle the task yourself, for even an extensive exterior job can be done by the average handyman.

By Benjamin Einhorn

AS long as the humid summer sun beats down, it may be hard to believe that cool, dry autumn will follow. But the weather man invariably predicts that it will, and on this subject he is always right.

With the coming of gentle autumn weather, painters will swarm out of their houses and, by rhythmic stroke of paint-loaded brushes, transform old weather-beaten, faded surfaces into fresh, colorful structures.

While some consider autumn the ideal painting season, others prefer to let winter ravage the surface a bit more and then, when the weather clears in April, May and June, they bring out ladder, brush and paint pail and get down to the chore or pastime (depending on the painter's point of view) of making the old shack look like new.

Enormous progress has been made, particularly within the last few years, in the

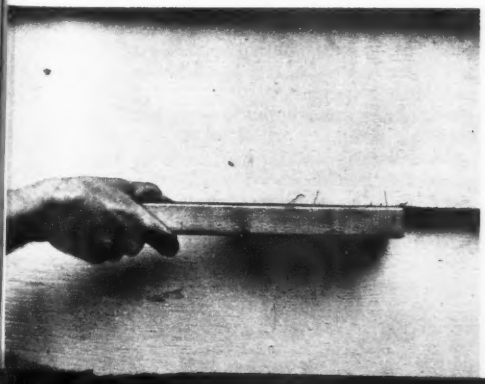
With a lineup like this, you're ready to tackle just about any exterior paint job. Note variety of scraping tools to remove old peeling paint.

A mixing pail is often overlooked by some house painters, but you'll find it very useful. Mix or thin your paint as directed on its container.

Loose scales should be sanded smooth before attempting new coat. Sad situation like this may require complete removal of old coat with torch.

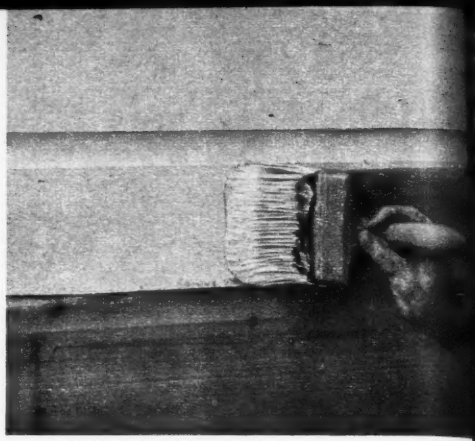
Paint failure may be due to use of inferior product, or moisture in the wood behind paint film. Two-bladed scraper is painter's indispensable tool.

Explore the joints and crevices of wood siding with a stiff wire brush. These areas are especially susceptible to deterioration caused by moisture.

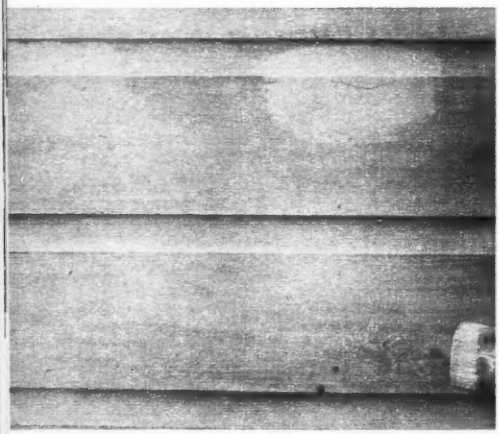


Before applying paint or primer to raw wood, treat all knots with a coat of shellac. Otherwise, resin in the knots will "bleed" through a coat of paint.

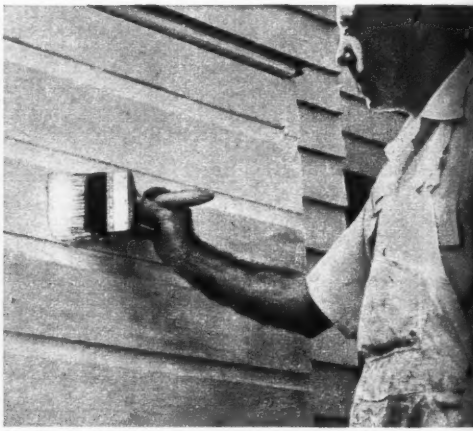
Plug all nail holes with putty before application of one-coat house paint. Cracks in the wood or gaping joints should be treated in the same way.



Always treat raw wood with primer before painting. This operation seals the wood pores and permits subsequent coats to adhere properly.



If necessary, spot-prime an old painted surface before brushing on one-coat paint. Faulty areas would ordinarily sop up paint without benefit.



One-coat paint, a relative newcomer on the market, is simple to apply and will completely hide most exterior surfaces after a single application.

Photos by Adelphi, du Pont, and Robert Scharff

scientific formulation and production of paints. Today's paints are more durable than they were barely a decade ago, yet they cost relatively less and are easier to apply.

One of the most recently introduced paint products is the totally new "one-coat" house paint that has a number of extraordinary qualities—it is easy to brush, non-sagging, full-bodied, durable, designed to refinish an old painted surface in fairly good condition with one coat instead of two.

The new one-coat product applies a full coat of paint in considerably less time and with proportionately less labor than the conventional two-coat paint. This obviously means that Mr. Housepainter will not only protect his house exterior at lower cost than ever before, but he'll save time while saving money!

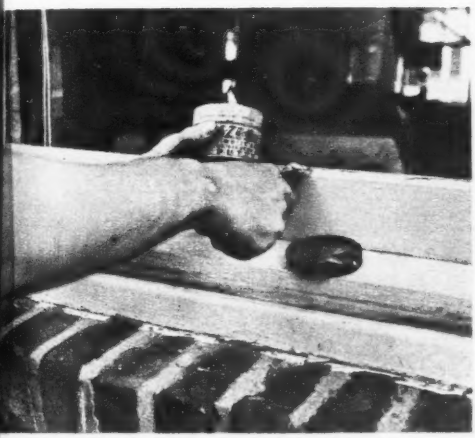
The unpainted home is wide open to attack by moisture which causes rot, decay and eventual interior and exterior repairs that are bound to be costly. But water simply rolls off the surface of a well-painted house.

The technique of painting is not hard to master. You don't have to take a course in the subject or burn the midnight oil read-

A metal clothes hanger makes a good can caddy when you're on a ladder. Keep one hand free for balance and holding when off the ground.

Don't wait until your home starts peeling over its entire exterior before planning a paint job. The longer you wait, the tougher the job will be.

Before painting window frames and sashes, see if your panes are being retained firmly. It's no problem to replenish any loose or missing putty.

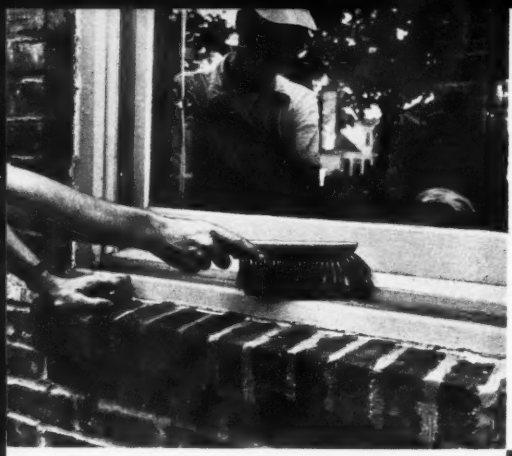


Drafts, moisture, and rot gain easy entrance through cracks between masonry and frames. Calking offers insurance against these dangers.

ing about it. All the homeowner has to do is to drop in to see his neighborhood paint dealer, buy a top quality paint and carefully follow directions on the can.

Let's follow a typical Mr. Homeowner and see what he does and how he does it. He wants to paint the outside of his house, so he visits his neighborhood paint store and says so. The paint merchant recommends a few brushes and a new one-coat exterior house paint put out by the Joe Doe Paint Company.

Mr. H. gets out his ladder, puts on his specs and reads the directions on the paint can. In general, they will read like this: The surface to be painted must be clean and dry. Avoid painting in cold or damp weather. Seal knots and sappy places by coating with pure shellac. Stir well and apply. For repaint work, a single coat of a good quality paint gives excellent results on old painted surfaces in fair to good condition. Remove loose or scaling paint by scraping, sanding or burning. Bare spots and badly weathered areas should be spot primed with John Doe Exterior Primer before the entire surface is painted. Apply the paint as it comes in the can. If necessary, a small amount of turpentine may be added. Brush out evenly, applying a full



Carefully brush away debris that may have resulted from puttying and calking operations. Crumbs will affect smoothness of coat.

To keep window panes free from paint while you're working on frames, several commercially prepared masks are available. You can also fabricate your own from cardboard or mark off the panes with masking tape.

When painting flat surfaces, use long, steady strokes. Don't bear down on brush. Heavy strokes will not distribute paint properly.

coat of paint. Coverage: approximately 500 square feet per gallon of one-coat paint.

On new wood surfaces apply a first coat of exterior primer according to directions on the label. Putty all nail holes after the first coat. Finish with a single coat of John Doe One-Coat House Paint, as in repaint work. Surfaces in poor condition or those that receive a considerable color contrast may require two coats.

Many homeowners find painting a thoroughly relaxing and enjoyable hobby. Men have been known to prefer it to gardening, golfing, even (in rare cases) fishing. There is unquestionably a rhythm about slapping paint on the house that gives the mind a rest and the muscles a gentle workout. And there is a wonderful feeling of accomplishment when the job is finished. Not only that, but the undoubted protection to the surface and the general increase in beauty are a source of considerable satisfaction.

Many "green" painters overdo the thing at the outset—they see much to be done and try to do most of it at the first try. That's not the way to go about painting a house. Take it easy but keep at it. Don't set any one-day goal so high that you exhaust your energy.

But for the man with a week-end, or one day, to devote to painting his house, there's no more interesting odd job around the place than to climb into some old clothes, pick up a paint brush and go to work. •

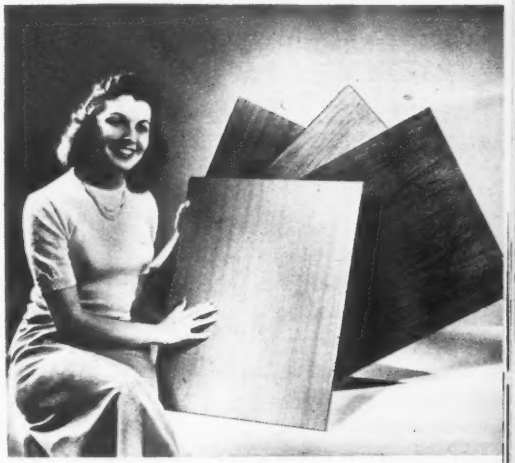
Ideal for closets, this wood folding door does not occupy any floor space when opened. Rolscreen Co., Pella, Iowa.

Air-diffusing ceiling panel for duct-type heating or ventilating systems insures even temperatures. The Pyle-National Company, Chicago.

Suction action of Spray-Mix mixes chemicals, detergents, insecticides with hose water. The Melnor Co., New York 13.

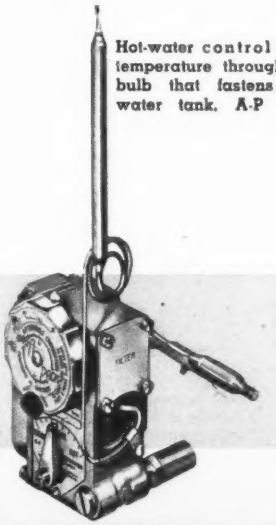
New Products for

★ For more details about products on this page, write: Dept. K MECHANIX ILLUSTRATED, 67 West 44 St., New York 36, N. Y.

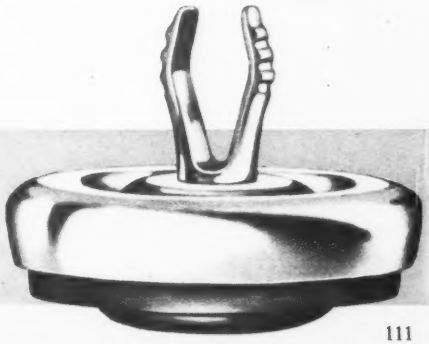


New interiors are easily achieved with Marlite Velwood, a wood-grain plastic-finish panel made by Marsh Wall Products, Dover, Utah. Moisture, grease, or stains can't harm the plastic finish.

Hot-water control adjusts temperature through thermo bulb that fastens against water tank. A-P Controls.



Snap-in swivel washer with a Neoprene face disk outlives an ordinary bib washer 10 to 20 times because it fits tightly without grinding against the faucet seat. Snap Products Corp., Syracuse.

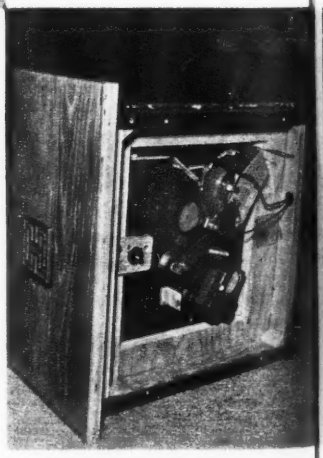


Oak-faced plywood and native oak are here presented in an honest and astute design in which the function has been allowed to dictate the form.

By William N. Tedesco

Contemporary Radio-Phono Console

Clean lines and limed-oak finish make this cabinet a worthy project for the homemaker who likes modern interiors.



Bottom of record-player drawer. Base must be cut out to fit the particular unit to be installed.

A FEW months ago, I wished to purchase a radio-phono console. A survey of the various models produced none that suited both my taste and my pocketbook, so I decided to build one. After a few sketches, a design was evolved that offered the functional simplicity required in contemporary furnishings. Since many of the construction difficulties inherent in projects of this nature have been eliminated, the cabinet can be recommended to all workshop devotees.

Obtain a 4x7-ft. sheet of ¾-in. oak-faced plywood. Have the lumber yard rip this panel into two pieces 18 in. wide and one piece 11¾ in. wide. Cut the 36½-in. cabinet top from one of the 18-in. pieces. Make five cleats from ¾-in. stock and glue and screw them to the top. The two slide cleats are 2 in. wide and 18 in. long. They are installed flush with the ends of the top. The front and rear framer cleats are 1½ in. wide and fit between the two side cleats. Note that the rear framer has a ¼x½-in. rabbet on the phonograph side to take a ¼-in. plywood panel. The fifth cleat is ¾ in. wide and runs from front to rear framers to support the top of the middle partition.

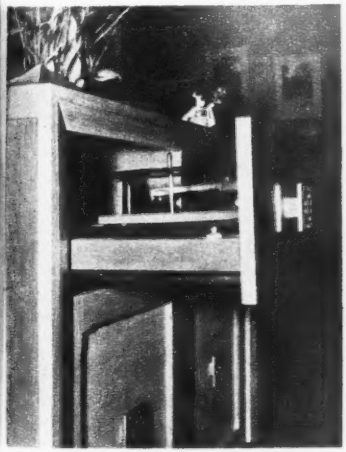
Each of the two oak-faced plywood sides measures 18x29¼ in. Install a ¾x¾-in. cleat along the bottom edge of the left-hand piece to support the record-storage shelf. Lay the sides and the top on the floor on their rear edges and tack diagonal braces between them to maintain right angles. Leaving 1¾ in. between the tops of the sides and the top of the cabinet, secure the two side cleats to the sides with 1¼-in. screws driven from inside. Cut two 1½x36½-in. bottom framers from 1¼-in. oak and run ¼x¾-in. rabbets on their inside edges to take the record-storage shelf. From similar material, make a 1¼x1½x15½-in. cleat for the bottom edge of the right-hand side piece. Glue and screw the framers and cleat in place.

Make the record-storage shelf from ¾-in. material and add to the assembly. Cut the middle partition to size and secure to the cleat at the top and the record-storage shelf at the bottom. Add two ¾x1¾x18-in. oak strips at the top to hide the end grain of the top and side panels. Fasten two ¾x1½-in. oak vertical framer cleats to the side panels flush with the front edges.

Cut the legs from 1¼-in. oak, taking care to have the grain run as shown in the drawing titled Leg Detail. Attach to the cabinet with glue and 1¾-in. screws.

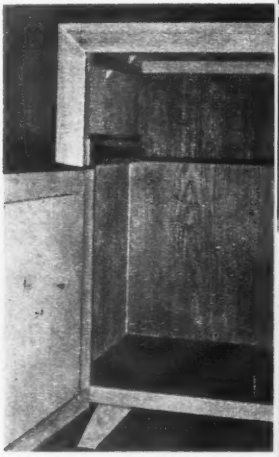
The "picture-frame" molding comes next. The bevels and miters can be cut on a circular saw. Clamp the pieces in place and secure with glue and 1¼-in. screws driven from inside. Fasten a ¾x¾-in. vertical cleat to the partition and a ¾x1½-in. false-door cleat at the right-hand end.

A detail shows the record-player drawer assembly. The base must be cut out to take the player. When fastening the player to the base, use rubber cushions under the washers to reduce vibration. Install a set

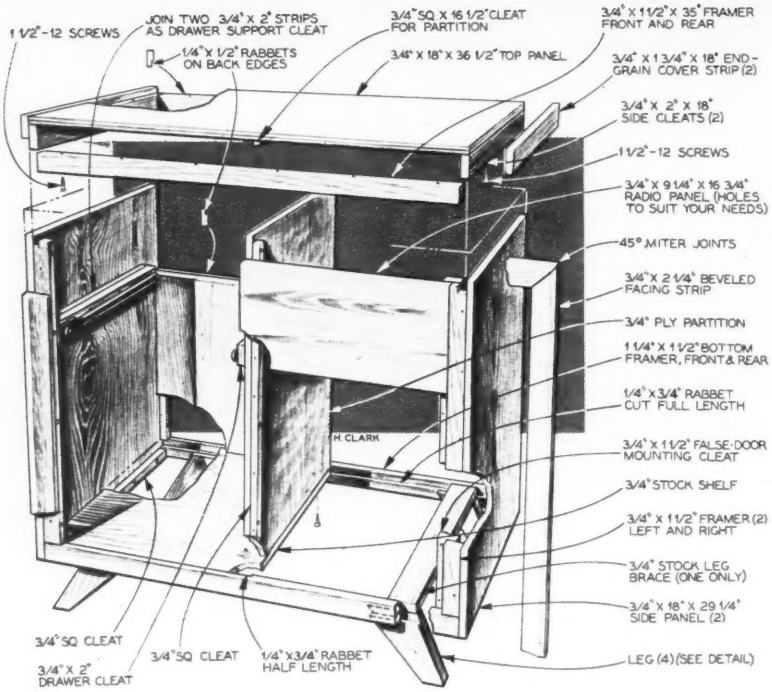


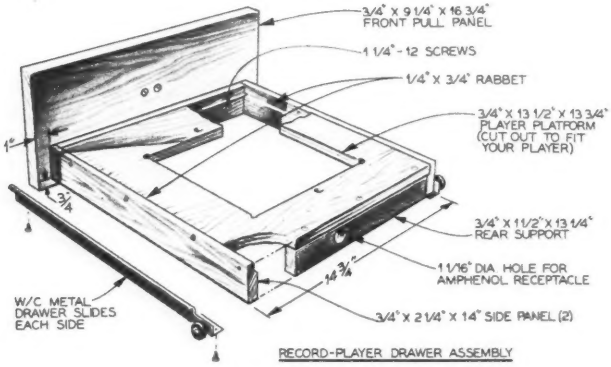
Drawer in open position. Note how the cabinet's face moldings are joined together with miters.

Legs are rabbeted for bottom frames and are held securely in place with screws and glue.

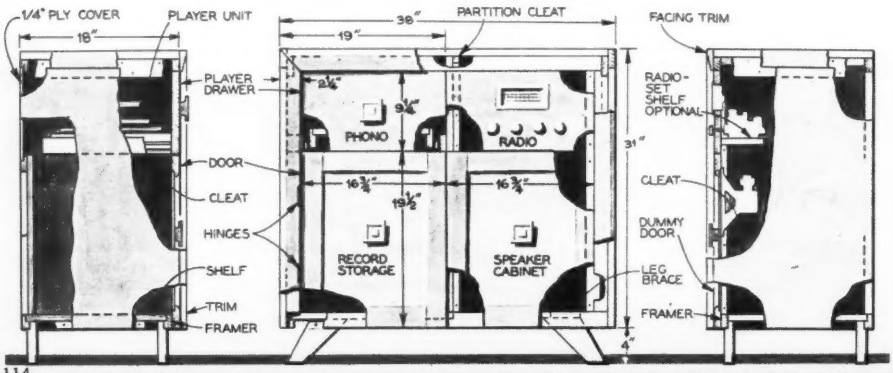


Webster-Chicago slides hold the record-player drawer in place. Records stack below.

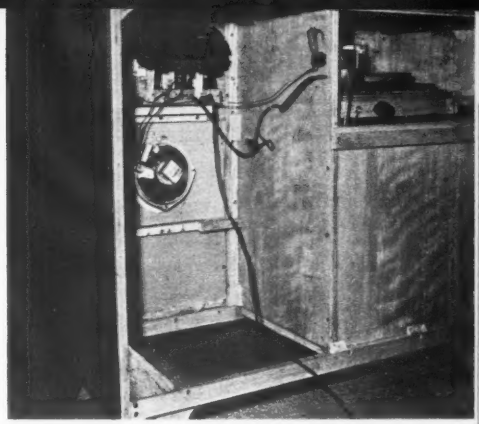


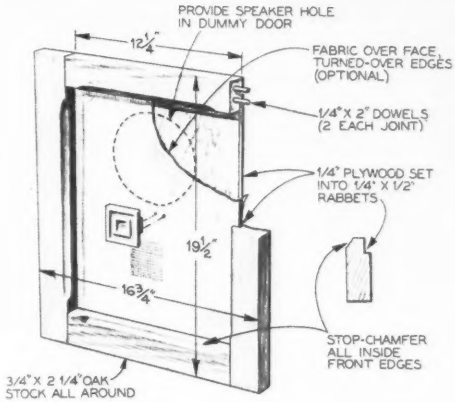


RECORD-PLAYER DRAWER ASSEMBLY

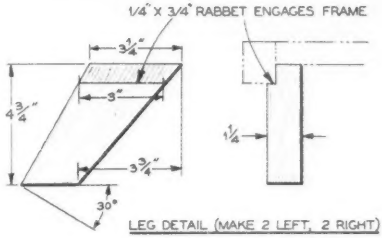


Right: The rear of the cabinet showing how the radio is installed on the front panel and how the record player and the speaker are connected.





DOOR ASSEMBLY (ONE HINGED - ONE DUMMY, SECURED)



LEG DETAIL (MAKE 2 LEFT, 2 RIGHT)

BILL OF MATERIALS

- 1 piece, oak-faced plywood, ¾" x 4'-0" x 7'-0"
- 1 piece, oak-faced plywood, ¼" x 14" x 3'-0"
- 1 piece, oak, ¾" x 1½" x 12"
- 1 piece, oak, ¾" x 1¾" x 3'-0"
- 1 piece, oak, ¾" x 2" x 3'-0"
- 1 piece, oak, ¾" x 2¼" x 12'-0"
- 1 piece, oak, 1¼" x 1½" x 6'-0"
- 1 piece, oak, 1¼" x 6" x 2'-6"
- 1 hardwood dowel, ¼" dia. x 4'-0" long
- ½ gross, flathead wood screws, 1¼" No. 12
- 1 dozen, flathead wood screws, 1¾" No. 14
- 2 dozen, flathead wood screws, ¾" No. 3
- 1 pint, wood glue
- 1 piece, grill cloth, 16" x 3'-2"
- 3 door pulls
- 1 pair, invisible hinges
- 1 door latch
- 4 rubber bumpers

of Webster-Chicago drawer slides. Two cleats must be added in the left-hand upper compartment of the cabinet to take these slides.

The back of the record-storage cabinet is a piece of the ¾-in. oak-faced plywood. Rabbet the top edge to take the ¼-in. plywood panel at the back of the record-player compartment and glue and screw the plywood in place.

Cut the door frames from ¾-in. oak, add the stop chamfers on the front surfaces, and rabbet the rear faces to take ¼-in. plywood panels. Assemble with two ¼-in. dowels and glue at each joint, squaring up and clamping until set. Add the fabric and the plywood panels as shown in the detail. The right-hand door is permanently attached to the cleats provided for it.

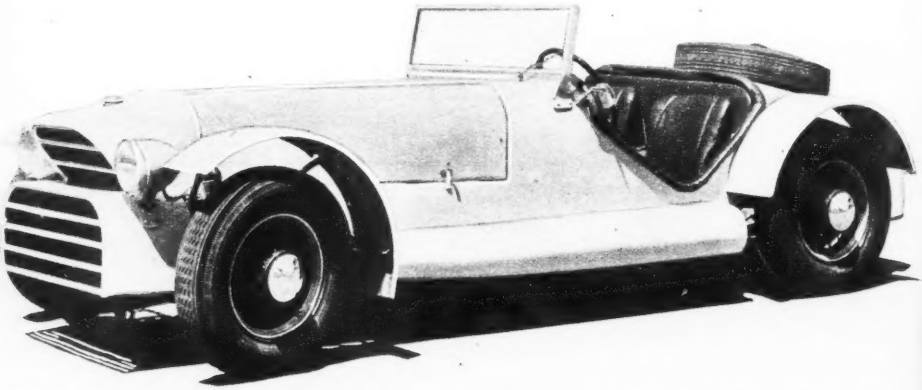
Bore and cut out the ¾x9¼x16¾-in. radio panel to accommodate the radio's knobs and dial face and then attach the panel to the cleats.

The cabinet is now ready for finishing. Sand, using successively finer grades, until a glass-smooth surface is obtained. Rub a mixture of finely ground silica and white lead into the open pores, dress down with steel wool, and apply a second coat of the mixture. Then brush on several coats of thin shellac, rubbing lightly with 3/0 steel wool between coats. The final surface is obtained by rubbing first with pumice and oil and then with rottenstone and oil. This surface can be waxed if desired.

The radio chassis goes on a little shelf mounted behind the panel that's cut out to accommodate the knobs and dial face. Our radio required a new dial system. This can be obtained from any mail-order radio supply house. Attach the speaker behind the right-hand permanently attached door, cutting an opening in the panel to fit.

Wire the record player to the radio unit, going through a terminal block. Install the record-player drawer, secure the three front handles in place, and add a small cabinet latch to the left-hand door. Your project is now complete. Set it up in your living room and prepare for compliments. •

MI WORKBENCH AWARD WINNERS

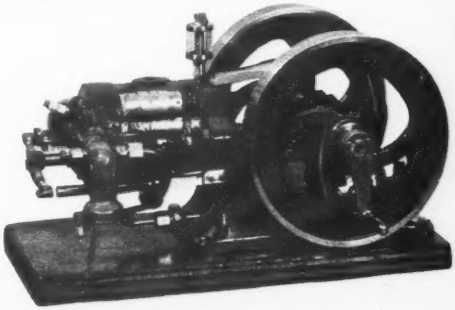


Custom sports car by Karey Starmer of Palo Alto and Jack Bagley of San Francisco is a modification of the MI Sportster (Plan No. HJ-19). Engine is a 1940 stock Ford and total cost was just under $700.

Modern coffee table at left was made of northern maple by Robert R. Childers, Jr., of Austin, Texas. Note the magazine shelf and the two drawers, which are used to store pencils, paper, playing cards, etc.

Blonde console, right, by Kenneth Rerie of Winnipeg, was built of ½-in. fir plywood with ¼-in. oak-plywood veneer, mahogany trim, handles made from ¼-in. aluminum.

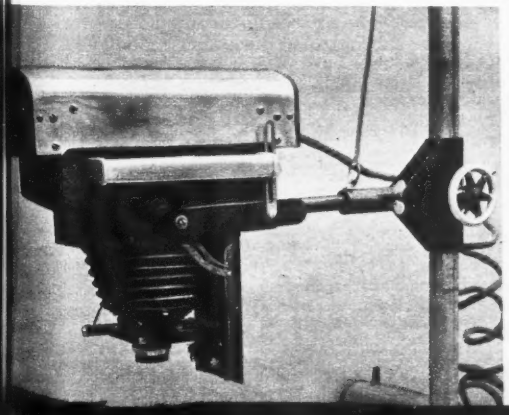
Each craftsman whose project is shown here receives a $5 check and a Workbench Award Certificate. How about sending us a photo and description of your latest project? If you aren't a winner, you may still receive a Certificate Of Merit. Photographs of your workshop are also eligible for an award. Send entries to MECHANIX ILLUSTRATED Workbench Awards, 67 West 44th Street, New York 36, New York.



Miniature gasoline engine, constructed by Robert Dillinger of Cleveland, has an automatic governor and a $1\frac{1}{4}$x$1\frac{13}{16}$-in. cylinder. Model is about 6 in. high and 12 in. long.

Sidewalk car, built by Otto Holzer of Haddonfield, N. J., for his three young sons, does 10 mph with a 1-hp washing-machine engine. Engine rpm are constant and car is set in motion by depressing clutch.

House trailer, right, measures only $6\frac{1}{2}$x 14 ft., but easily sleeps four. James Vineyard of Monrovia, Calif., used muslin-covered $\frac{1}{4}$-in. plywood for the shell. Features include a heater and a galley.



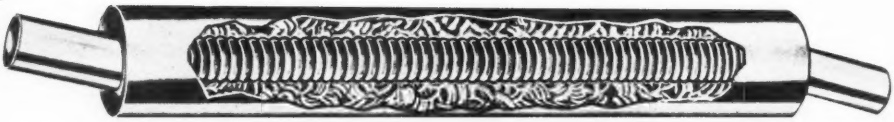
Tilt-head enlarger, left, by Clarke Blair of Hagaman, N. Y., uses four 6-watt fluorescent tubes for light. It will take from 35mm to 4x5 negatives, has interchangeable lenses and a counterbalanced head.

CARE WILL SAVE YOUR CAR

car care

The Muffler and Exhaust

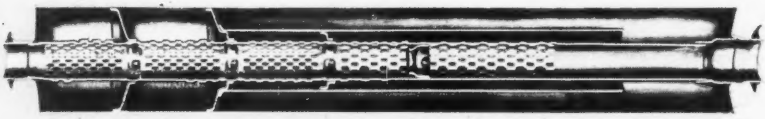
By Frederick C. Russell



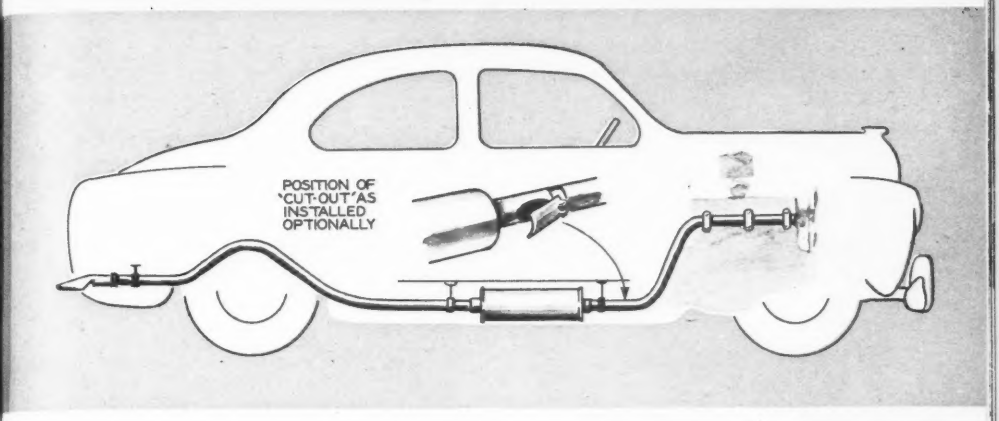
The cut-away view above is of a muffler featuring a deep, mellow tone. Such a muffler, designed to relieve excessive back pressure because of its straight through construction, is packed with steel shavings for tonal quality and a heavy wire coil for its silencing effect.

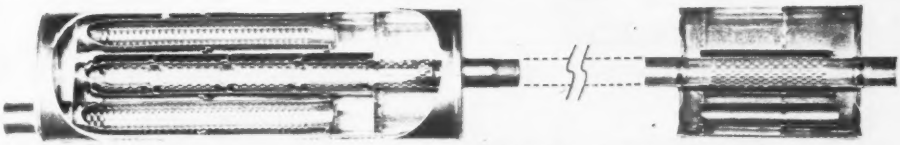
DON'T look now, but that muffler on your car has become a most discussed unit in automotive engineering circles today. Perhaps you've had a notion that it ought to be taken off and thrown away. Maybe so, but if you do discard it, be sure you replace it with one of the newer, more scientifically designed exhaust controls.

In going modern the muffler has brought back into the picture some basic facts that are too often overlooked in a hot rod age. Of prime importance is the point that the muffler is essentially a noise controlling device—not just a silencer—but a tuner. The truth of all this has come into sharp focus because of the radical rise in engine horsepower. Many automobilists think of the muffler as a necessary evil, a power-killing gadget. Detroit realizes however that power increases in the engine call for additional control at the exhaust. Cadillac's

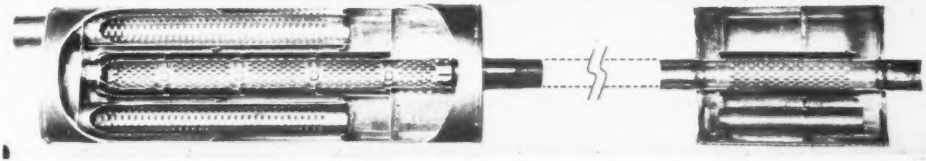


Another type of straight through muffler, this one has a series of holes in the tube which permit some of the gas to escape into the surrounding chamber.





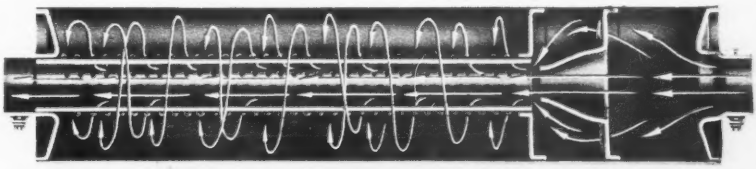
In order to silence its 190 horses, the 1952 Cadillac uses four mufflers, in tandem as shown above. Mufflers near engine are of tri-flow design. The short straight through mufflers at rear of car act as resonators as most of work has already been done by front mufflers.



190 hp wagon, for example, requires *four* mufflers.

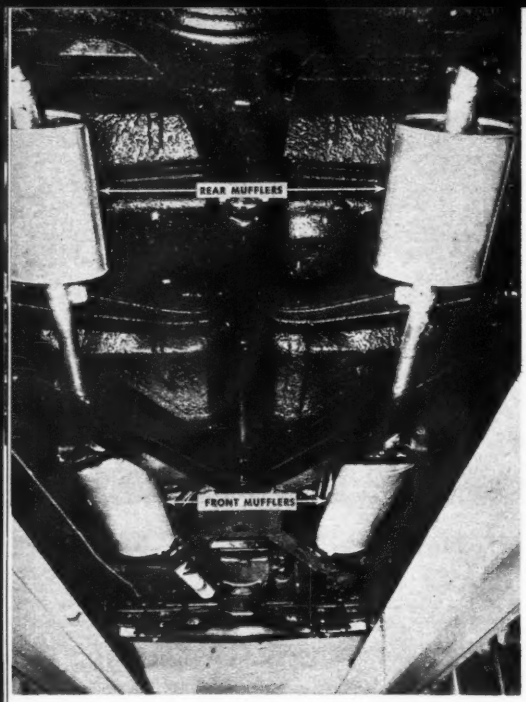
Few realize that there always is a psychological factor in exhaust noise. Many drivers of cars with automatic transmissions have become aware of what is known as exhaust "boom." It was there in their manually shifted cars, too, but they were too busy operating the clutch, accelerator pedal and hand shift to notice it. Today this sound has to be controlled by mufflers tuned to the engine. The bark which follows removal of the muffler merely revives what old timers noted in the days when cut-outs were legal—the engine sounded as if it had developed a lot more power and the car "looked" as though it were speeding.

The old-time muffler did cause excessive back pressure when it became clogged. It was composed of baffles and dead end chambers. Today's silencer is quite a

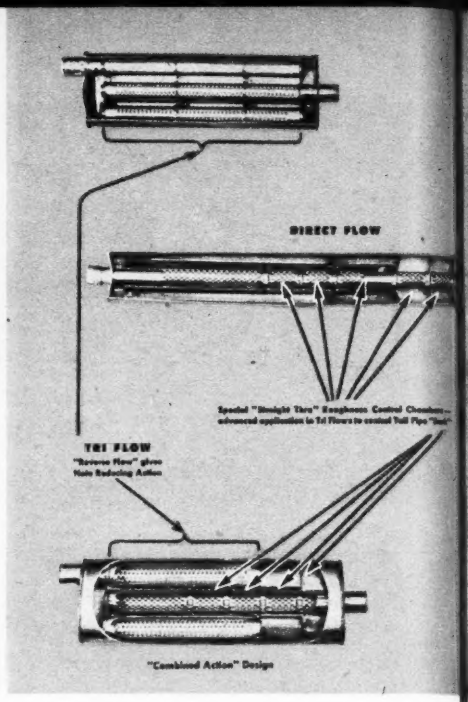


One of the first changes in straight through muffler design, was the use of a louvered tube instead of baffles to break up the sound waves.

Photos courtesy of Almquist, Walker, and General Motors



A pit's eye view of the 1952 Cadillac showing its four-muffler assembly. The mufflers are oval-shaped in order to gain some extra road clearance.



Tail pipe bark is checked in tri-flow mufflers (top) by reverse flow; in straight through jobs (center) by resonator chamber; bottom shows combination of both.

different article. Twenty-two years ago the editors of Automotive Engineering said this about mufflers: "Formerly the majority of cars were equipped with muffler cut-outs. Since its use was overdone, many cities and states prohibited such an arrangement on a car. Furthermore, the power loss has been proved a fallacy." They also pointed out that the use of a cut-out doesn't even help in checking up on an engine's misbehavior, due to the fact that the explosions of multi-cylinder engines overlap. If exhaust trouble is suspected, check for excessive back pressure with a vacuum gauge. Slowly open the throttle until the engine is perking at about 2,000 rpm's; then close it quickly. The pointer of the gauge should drop back to the normal reading immediately, if there is no excessive back pressure. But if the pointer of the gauge shows five inches or more over the normal mark, and also shows a tendency to stop momentarily on its way back, there's clogging.

But, a clogged muffler won't be the only possible explanation. Check for a pinched tail pipe, a damaged exhaust pipe or trouble with the heat control valve. I won't go into all the theory of it, but take the word of Audel's Automobile Guide that, "a slight excess of back pressure above atmospheric pressure is necessary to force the gases out of the cylinder."

We've gone a long way toward silencing the engine scientifically. The straight through type of muffler was one of the first steps in the right direction, for it took into account the muffler's major purpose—to provide for a gradual expansion of the gases rather than to block them. This is done somewhat on the order of those acoustical titles used on ceilings in public buildings. The exhaust gases pass straight through such a muffler and on the way also pass through the holes of the inner shell into the surrounding chamber.

Apparently the straight through muffler isn't the answer to some of the newer problems, for we see a shift on many of the newer models to systems which utilize a reversal of gas flow. This includes a tri-flow muffler in which the gases may do a double reversal and pass through three tubes. However, the gases are not forced to conform to this reversal since the piping is drilled with numerous escape holes. Nash made a switch between 1950 and 1951 models. Chevrolet adopted a unique muffler for the Powerglide model featuring a tuning chamber [*Continued on page* 154]

How to Build HERON

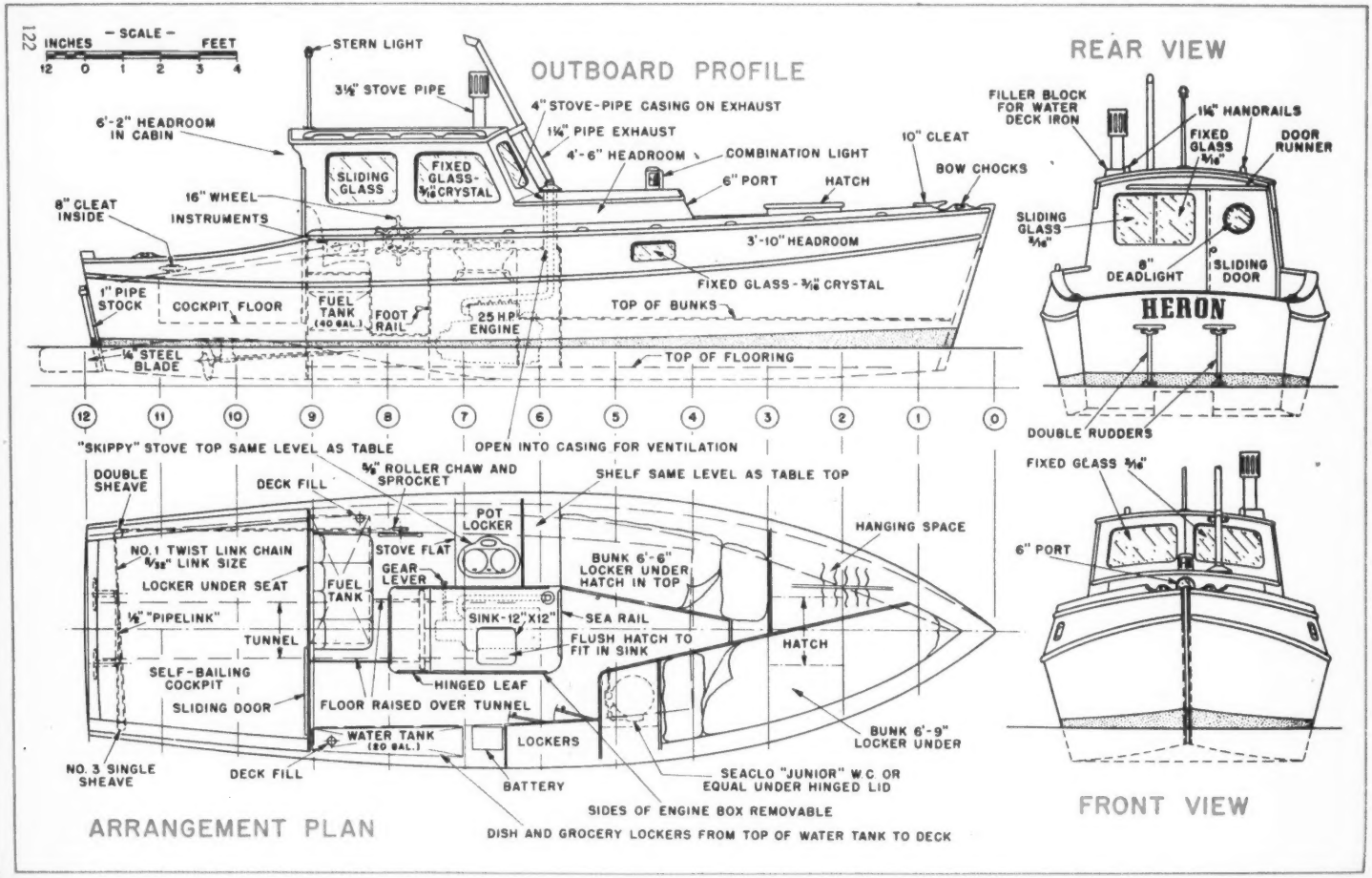
Length: 24 ft. Draft: 10½ in.

Speed: 8 mph with 25-hp engine.

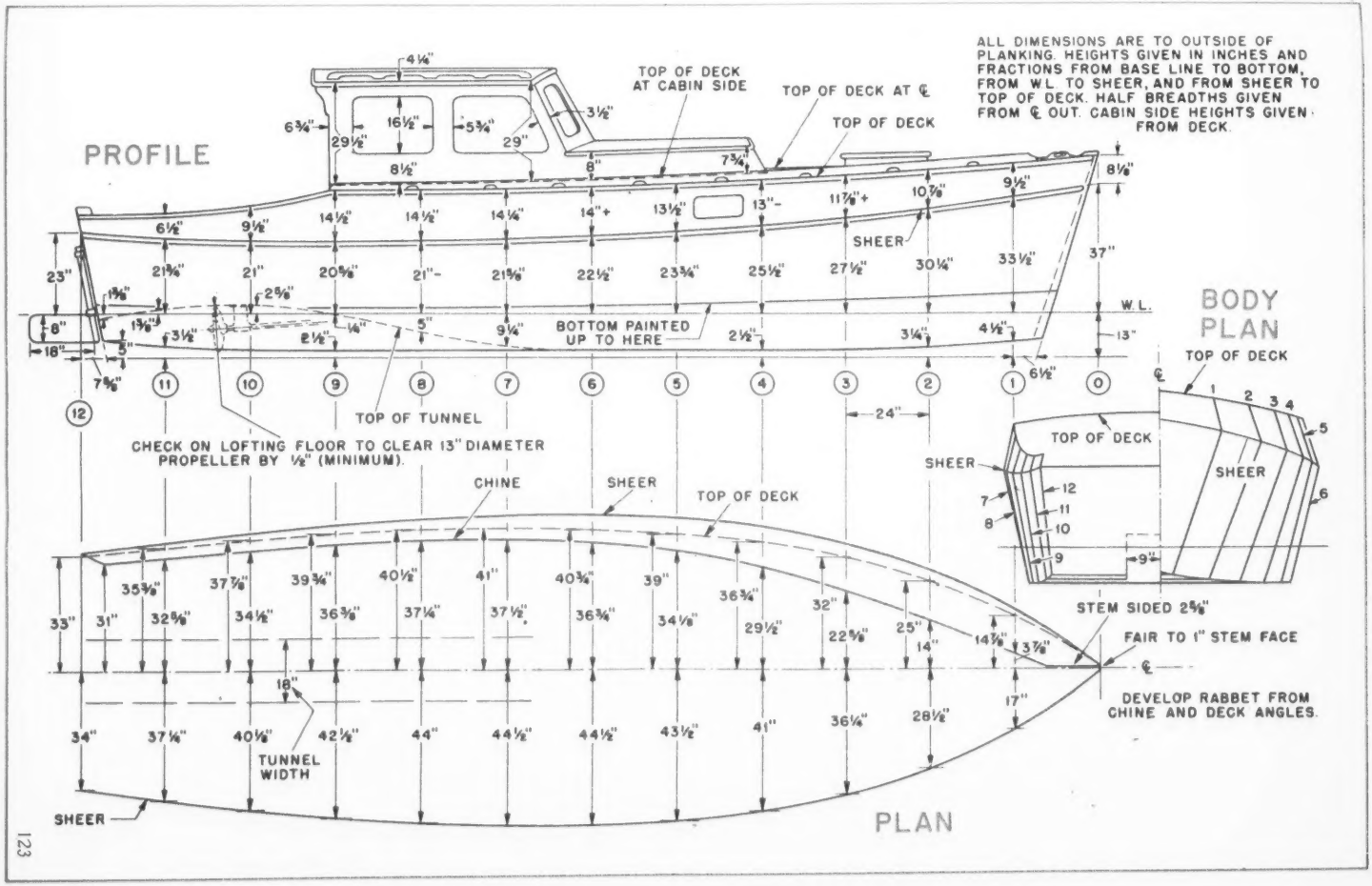
By Wm. Garden, Naval Architect

THE first little cruiser constructed from this model is owned by Dr. Russell Jackson of Anchorage, Alaska. Anchorage is situated on Coon Inlet, a body of water well known for excellent fishing. A shallow-draft yet seaworthy boat was needed, for the inlet has miles of shoals and terrific tidal currents, rips, and over-falls.

Since Heron was designed to be a back-



ALL DIMENSIONS ARE TO OUTSIDE OF


ALL DIMENSIONS ARE TO OUTSIDE OF PLANKING. HEIGHTS GIVEN IN INCHES AND FRACTIONS FROM BASE LINE TO BOTTOM, FROM W.L. TO SHEER, AND FROM SHEER TO TOP OF DECK. HALF BREADTHS GIVEN FROM ℄ OUT. CABIN SIDE HEIGHTS GIVEN FROM DECK.
PROFILE
TOP OF DECK AT CABIN SIDE
TOP OF DECK AT ℄
TOP OF DECK
SHEER
W.L.
BOTTOM PAINTED UP TO HERE
TOP OF TUNNEL
CHECK ON LOFTING FLOOR TO CLEAR 13" DIAMETER PROPELLER BY ½" (MINIMUM).
BODY PLAN
TOP OF DECK
SHEER
CHINE
SHEER
TOP OF DECK
STEM SIDED 2⅝"
FAIR TO 1" STEM FACE
DEVELOP RABBET FROM CHINE AND DECK ANGLES.
TUNNEL WIDTH
SHEER
PLAN

Here's the first cruiser built from Heron's plans. Note that a trunk cabin is shown in the drawings. This gives more headroom over the berths and head.

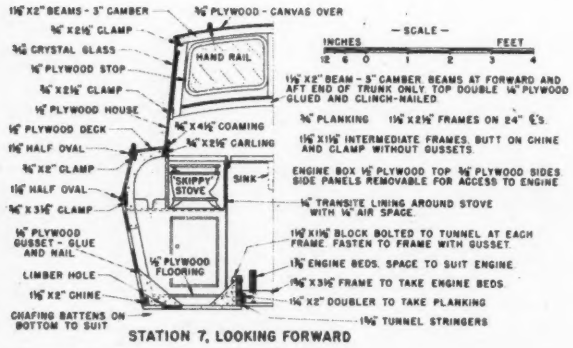
yard project, construction has been kept simple. The flat-bottom form is ideal from this angle and, providing the proportions are kept right, makes an excellent little boat. Two of the most important features of any good flat bottom are narrowness forward and a deeply immersed chine at the bow. Both help to reduce pounding to a minimum and give the boat a normal look when underway.

For river and lake cruising, she is close to ideal. When it is desired to take a party aboard or put it ashore, the bow is simply run up on any convenient beach. And the shallow draft and well-protected propeller make it possible to run many small streams.

The cabin accommodates two with a fair degree of comfort. The pilot-house arrangement is unusual, but works out well in practice for a boat of this sort. For single-handed cruising in particular, the arrangement is almost perfect.

The form of the tunnel stern is important, so care must be taken when building the boat to hold the shape, particularly in the section aft of the propeller. Two rudders are employed for maximum control. Note that the steering wheel is fitted with the shaft running athwartships. While this is an unusual way to install a wheel, it is handy and is simple to get used to.

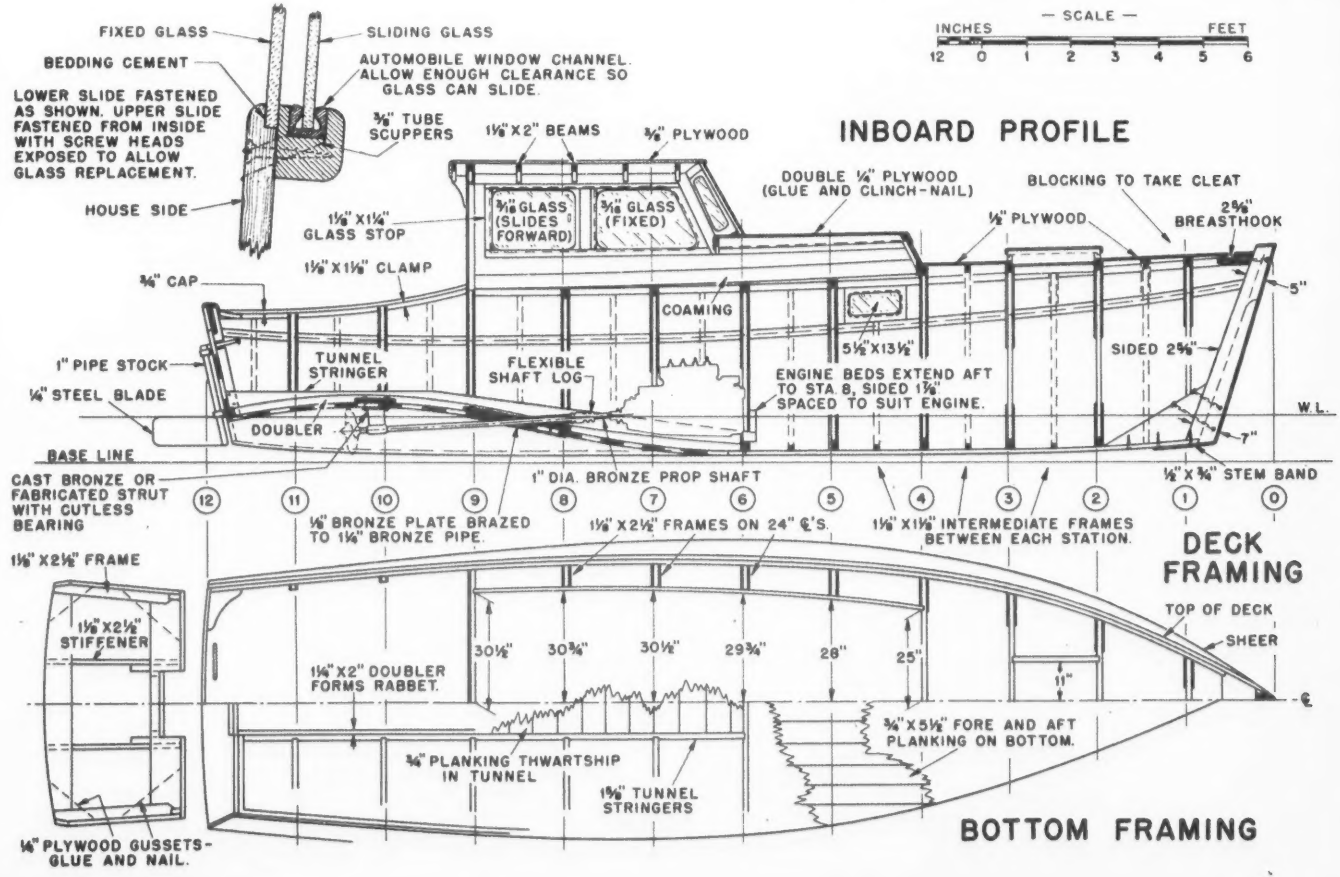
After studying the drawings carefully, the first step is to lay down the lines of the boat full size on either some reject ¼-in. plywood or a smooth floor. When the fore-and-aft lines are faired up, develop the body plan. Take all frame shapes from the body plan and cut the material to size. A good description of this process and all other procedures to be followed in building the boat can be found in any standard book on the subject such as Modern Boat Building by Edwin Monk or Small Boat Construction by Robert Steward. Great care should be taken during this part of the work to insure an [*Continued on page* 150]



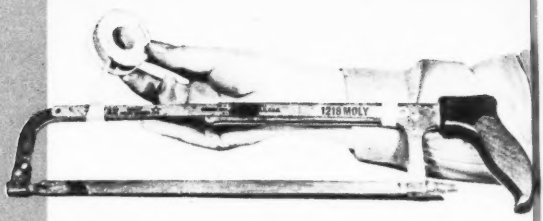
STATION 7, LOOKING FORWARD

LARGE-SCALE PLANS

including complete Bill of Materials will simplify construction. Send $3 to MI Plans Service, Fawcett Bldg., Greenwich, Conn. Please specify Plan No. B-218.


FIXED GLASS
SLIDING GLASS
BEDDING CEMENT
AUTOMOBILE WINDOW CHANNEL. ALLOW ENOUGH CLEARANCE SO GLASS CAN SLIDE.
LOWER SLIDE FASTENED AS SHOWN. UPPER SLIDE FASTENED FROM INSIDE WITH SCREW HEADS EXPOSED TO ALLOW GLASS REPLACEMENT.
3/8" TUBE SCUPPERS
HOUSE SIDE
1 1/8" X 2" BEAMS
3/8" PLYWOOD
INBOARD PROFILE
— SCALE —
INCHES
FEET
12 0 1 2 3 4 5 6
3/16 GLASS (SLIDES FORWARD)
3/16 GLASS (FIXED)
DOUBLE 1/4" PLYWOOD (GLUE AND CLINCH-NAIL)
BLOCKING TO TAKE CLEAT
1/2" PLYWOOD
2 5/8" BREASTHOOK
1 1/8" X 1 1/4" GLASS STOP
1 1/8" X 1 1/8" CLAMP
3/4" CAP
COAMING
5"
5 1/2" X 13 1/2"
SIDED 2 5/8"
1" PIPE STOCK
TUNNEL STRINGER
FLEXIBLE SHAFT LOG
ENGINE BEDS EXTEND AFT TO STA. 8, SIDED 1 7/8" SPACED TO SUIT ENGINE.
1/4" STEEL BLADE
DOUBLER
W.L.
7"
BASE LINE
1" DIA. BRONZE PROP SHAFT
1/2" X 3/4" STEM BAND
CAST BRONZE OR FABRICATED STRUT WITH CUTLESS BEARING
12 11 10 9 8 7 6 5 4 3 2 1 0
1/8" BRONZE PLATE BRAZED TO 1 1/4" BRONZE PIPE.
1 1/8" X 2 1/2" FRAMES ON 24" ℄'S.
1 1/8" X 1 1/8" INTERMEDIATE FRAMES BETWEEN EACH STATION.
DECK FRAMING
1 1/8" X 2 1/2" FRAME
1 1/8" X 2 1/2" STIFFENER
TOP OF DECK
SHEER
30 1/2" 30 3/4" 30 1/2" 29 3/4" 28" 25"
11"
1 1/4" X 2" DOUBLER FORMS RABBET.
℄
3/4" X 5 1/2" FORE AND AFT PLANKING ON BOTTOM.
3/4" PLANKING THWARTSHIP IN TUNNEL
1 5/8" TUNNEL STRINGERS
1/4" PLYWOOD GUSSETS-GLUE AND NAIL.
BOTTOM FRAMING

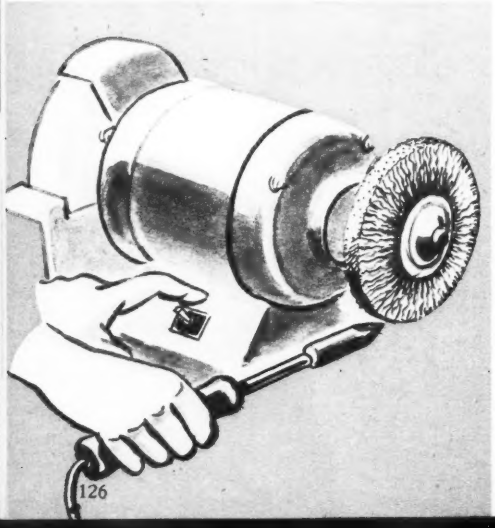
SHOP SHORTS



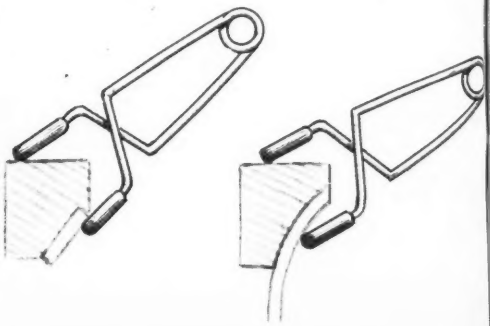
That extra hack-saw blade is always handy if taped to the saw frame as shown above. When actually using the saw, the extra blade should be removed or tape added to cover the teeth completely.

Rubber mallet. To make a good substitute for a rubber mallet, place a crutch tip, sold by most five-and-tens, over the head of a hammer. If you must force the tip to get it on, lubricate with a little water.

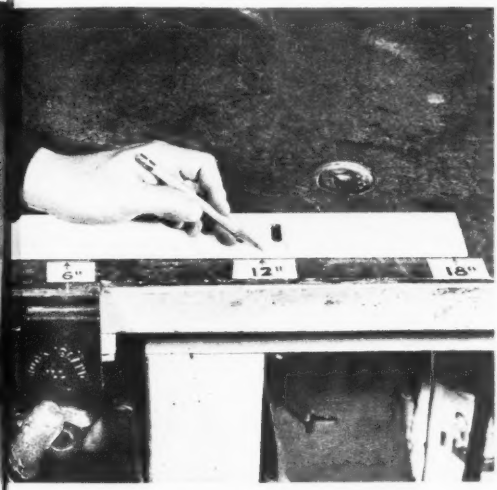
Clean your soldering iron quickly by burnishing the copper tip on the wire wheel of a power bench grinder as illustrated below. The iron can be cleaned in this manner when either cold or heated.



Spring clamps taken from clamp-on photoflood reflectors make excellent gluing clamps when veneering picture frames and other small, odd-angled jobs. The rubber on the clamp ends prevents marring wood.



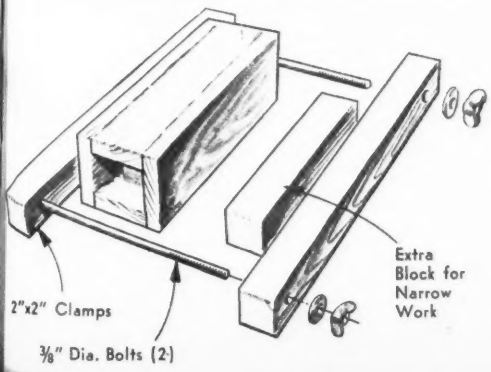
Tape protects test bulb. A bulb carried in a tool kit for testing outlets and fuse receptacles will be less likely to break—and if broken won't shatter into many pieces—if taped up as depicted at right.

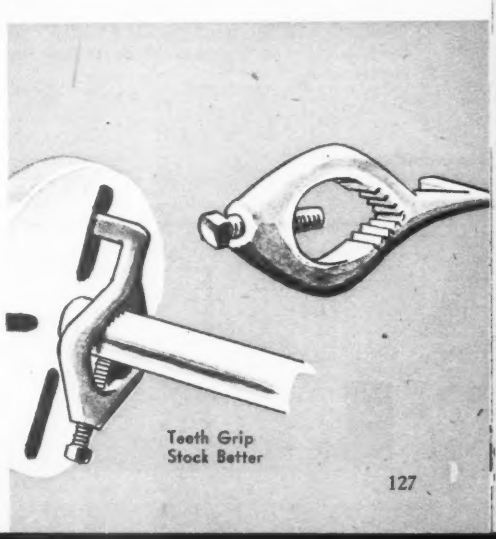


Length marks along the workbench edge will save time when you want to make quick measurements. Common masking tape and black ink are used. These tabs will stand a lot of abuse before replacing.

Improved lathe dog. File notches along the inner edges of a lathe dog as shown below. The dog will then grip the stock without enough pressure being needed on the screw to dimple or scratch the work.

Make a gluing clamp, as depicted below, from two pieces of scrap hardwood and two bolts with wing nuts and washers. Should you run out of thread when tightening, use additional scrap wood to fill the void.





Dingy Vanity Makes Modern Desk

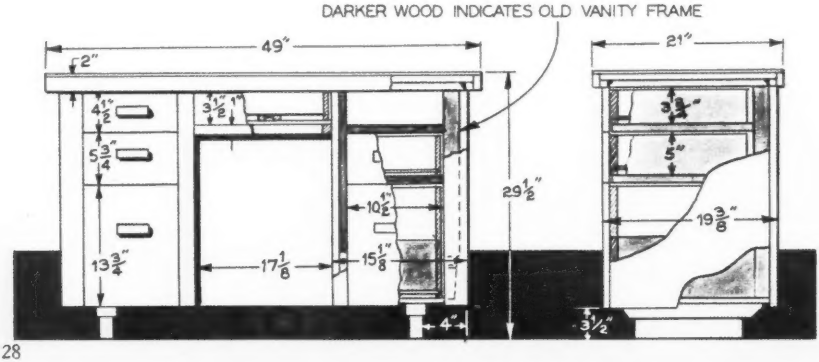
Use the solid framework and drawer construction of well-built, out-of-date furniture as a base for a modern piece.

THINK twice before you throw away any piece of furniture that has apparently outlived its usefulness. A comparatively simple remodeling job may turn it into a brand new, up to the minute, valuable addition for your home that you will be proud to own. The old vanity, shown on the next page, was destined for the scrap heap. Faced with quarter-sawed walnut faced plywood it became a beautiful modern desk.

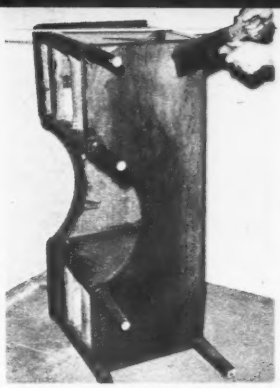
The straight line modern style selected for this desk called for a minimum of new construction. As the lumber core plywood would add considerable weight, all surplus wood such as the back panels and the center bracing was removed. Modern "islands" serve as legs.

Before cutting the plywood, draw a scale plan of the exact location of every cut to be made. Remember to plan on the direction of the grain, especially on the drawer parts. On the desk planned, no end grain is exposed except on the drawers when they are opened.

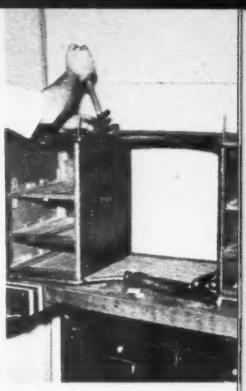
Carefully fit all panels, the two ends, the two centers, and the one for the back before assembly. Drill holes for the screws through the old walls. Locate each panel, clamp it securely in place and carefully check for fit. Remove and give the original walls a thorough coating of glue. Replace, reclamp, and screw in place from the inside of the old walls. After the panels have been installed, the front vertical strips are fitted and are fastened with glued dowel joints.



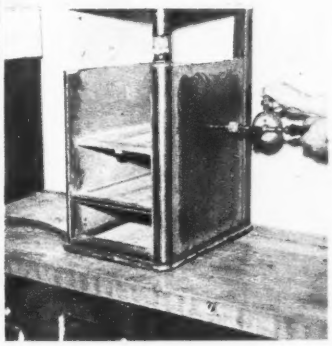
This is the original relic as it appeared when rescued from a dingy cellar storage room.



The first step is to cut the legs down with a back saw. Two center legs are completely removed.



The next step is to remove the wide board across the bottom of the vanity, for added knee room.



Holes are drilled through old walls for the screws that will hold the new panels in place.

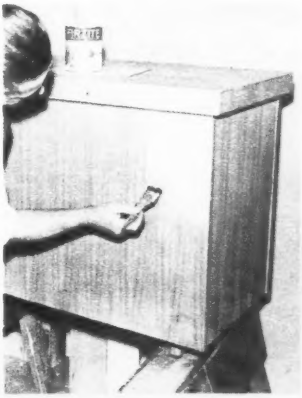
The handles are made of walnut dowels fastened in place with 8x32 machine screws.

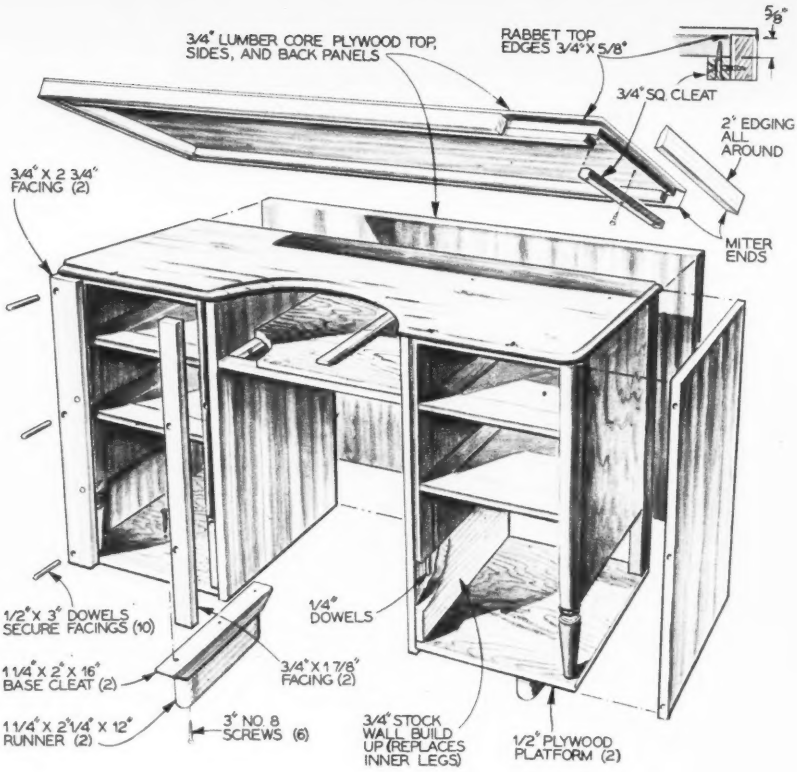
After an application of glue, new panels are held in place with clamps and screwed from inside.

After sanding, pickled walnut finish is obtained by applying white Firzite and wiping it off.

The new facings for the drawers are similarly installed with glue and screws and then jointed.

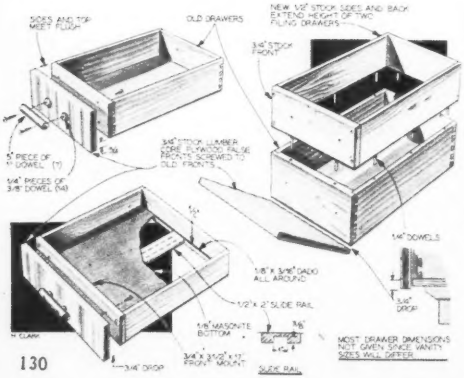
Desk was finished with two coats of Satinlac plus a waxing for a beautiful modern effect.





Next, the drawers. They are simply faced with the plywood, fastened with glue plus screws. The bottom drawers on each side are built up to size. The four walls are extended with new wood that is joined to the old with glue and dowels.

As there was no center drawer in the old vanity, it was necessary to build a new one. Construction was simple. The back was made from one piece ½x3x17 in., the two sides ½x3x16 in., and the front ¾x3½x17 in. Each of these received a $\frac{1}{16}$ in. deep saw cut ½ in. up from base and wide enough for a ⅛x16¼x16½ in. Masonite bottom. Glue and wood screws completed assembly.



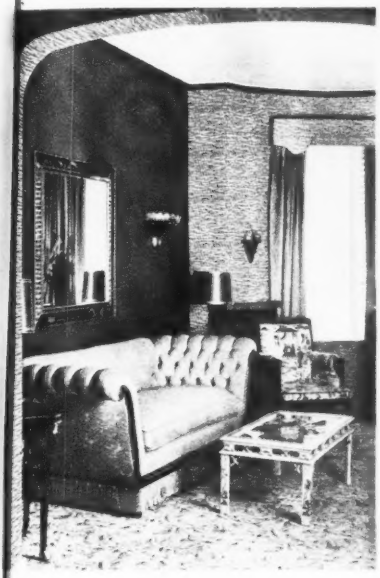
The center drawer slide that fitted on the under side of the drawer was made from a piece ½x2x16¾ in. It was given a one inch dado cut, ⅜ in. deep. The half-inch deeper front on the drawer plus the fact that the Masonite bottom is a half-inch from the bottom provides the space necessary for this slide. A ⅜x⅞x16½ in. strip down the center of the compartment base acts as a guide and runner.

The drawer handles were made from a 5 in. piece of one-inch dowel. A "pickled" finish was obtained with white Firzite, thinned slightly with turpentine. This was brushed on a small area at a time and allowed to set for about two minutes. It was then rubbed into the wood with a soft cloth and wiped off. After twenty-four hours, the wood was lightly sanded and a coat of Satinlac was brushed on. The next day this coat was lightly sanded and a second coat applied. Final finish consisted of an application of paste wax and a flannel buffing.

—*Clarence A. Martin* •

monthly photo contest

$5.00 Award .....Interior Detail
Negative was exposed by "painting" the scene with a No. 1 flash photoflood; D. Goodman of Brooklyn, N. Y.



1st prize ($10.00) .....Sunshine And Shadows
Exposed at 1/50th at f-11, Plus X; Esther deRoche, Passaic, N. J.

Please put your name, address and picture-taking data on back of each print. Wrap with cardboard stiffeners and enclose a self-addressed stamped envelope or postage for return of unused photos. Prize-winning pictures are not returned. Judges are MI Editors. Duplicate prizes awarded in case of tie. Please address entries to: Photo Contest, *Mechanix Illustrated*, 67 W. 44th St., N.Y.C. 36

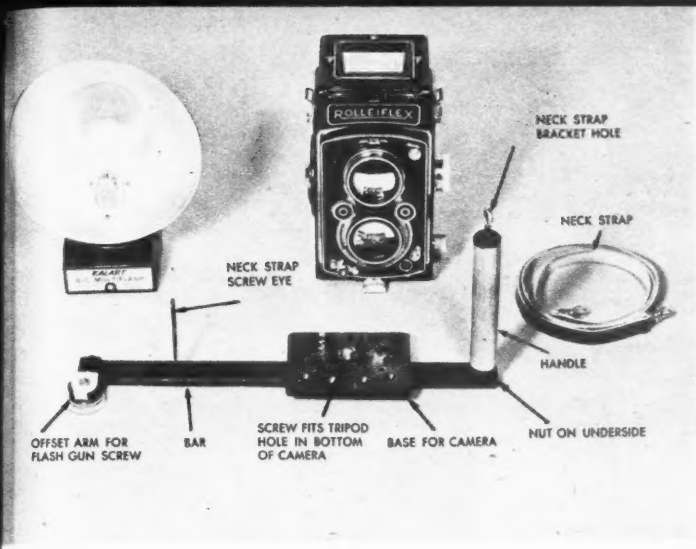
$5.00 Award .....By The Sea
An orange filter was used to darken the cloudless sky. Frank Meitz, Los Angeles; roll film camera.

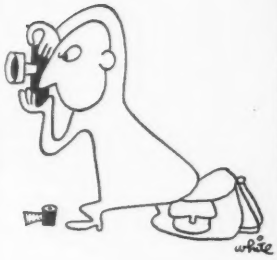
$5.00 Award .....Busy Pals
Taken by Alfred Fitzsimmons of Dubuque, Iowa. Exposed at 1/400th and f-32 with two flash bulbs.

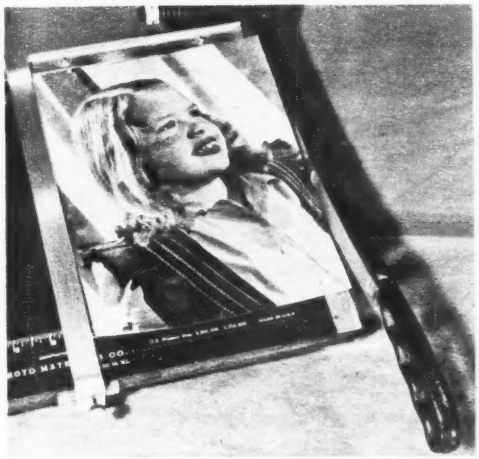
Camera Harness. A stiff piece of 1/8 in. aluminum, about 10 in. long will give you a third hand when taking flash pictures. Drill three holes in it. One for the flash gun, another for the camera and the last for a 5/8 in. dowel which makes a handy grip for the entire assembly. One end of the neck strap is attached to a screw eye at the end of the dowel while the other end fits a short bracket bolted to the bar.

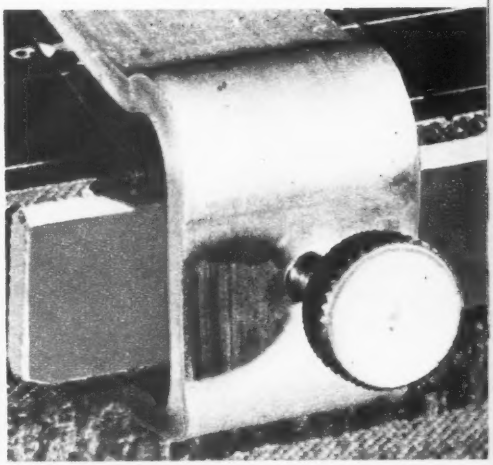
PHOTO SHORTS

Keep It Clean. One of the secrets of successful negative processing, especially in 35mm work, is the necessity for absolute cleanliness of all solutions. Developer and hypo should be filtered before use. Just stuff a bit of cotton in throat of funnel. Picture below shows amount of dirt removed from a half-gallon of D-76 developer.









Trimmer Guard. Trimming boards with left hand guides (sort of a rip fence) generally use a pointed set screw to lock the guide in place, with consequent marring of the trimmer. Save surface by inserting a bit of Masonite in front of the screw before tightening.

Easel Holder. Many darkroom workers now use the fixed margin type of easel because of their convenience. However, they have a tendency to "walk" when a sheet of paper is inserted because of their light weight. Correct this by placing two heavy weights at adjacent sides as shown in the photograph at left.

Cold-Light Enlarger Stand

Photo by Robert Brightman

The addition of a cold-light unit and a suitable support will convert your press camera into an efficient enlarger.

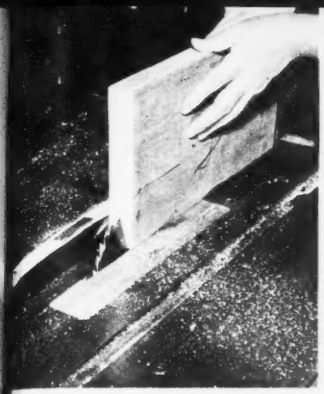
By Clarence A. Martin

EVERY piece of photographic equipment that can be built at low cost leaves just that much more money available for paper and film. The idea for this enlarging stand was born when the author came across a couple of discarded friction type door holders. The stand was designed for a Graflarger back to be used on a 4x5 Crown Graphic. It may be readily modified for use with other cameras or as part of an enlarger in its own right. It provides an unusually rigid support and yet can easily be disassembled for storage. The stand can also be used for copy work.

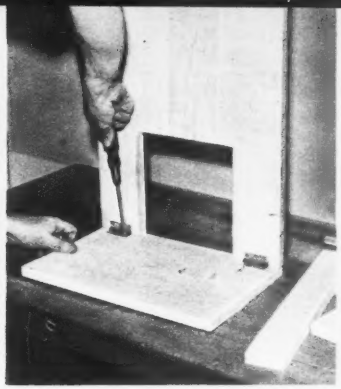
The wood base is made of glued-up sections of pine ¾x16x21 inches. The 8x8 in. hole cut in the center permits extreme enlargements by projecting to the floor.

The stock for the camera holder or carrier is pine, 1¼x8x16 (or you can use two ¾ in. pieces glued together). A section is cut from the bottom edge at a 20° angle and 2 in. deep to correspond to the angle of the metal frame. This fits the pieces salvaged from the friction door holders. Two 4x5 cuts are taken out of the top outer edges leaving an inverted T-shaped piece. A small spirit level mounted on the top edge will insure having the enlarger parallel to the base.

The two metal supports are made from steel stock, ¼x¾x72 in. Drill three $\frac{5}{16}$ in.



The piece of wood used for the camera support, is notched at a 20° angle on the circular saw.



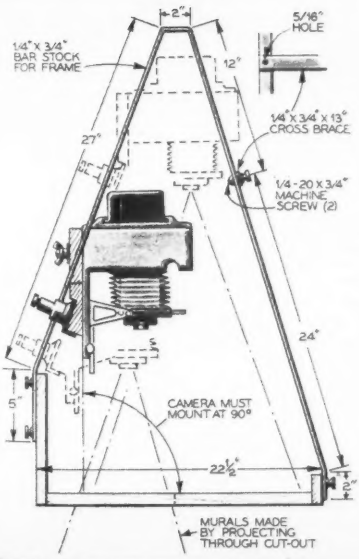
The base of the enlarger stand is hinged to facilitate storage. Cut-out is for projection to floor.

Clamp the steel stock in a vise and bend it to the required shape with a heavy hammer.

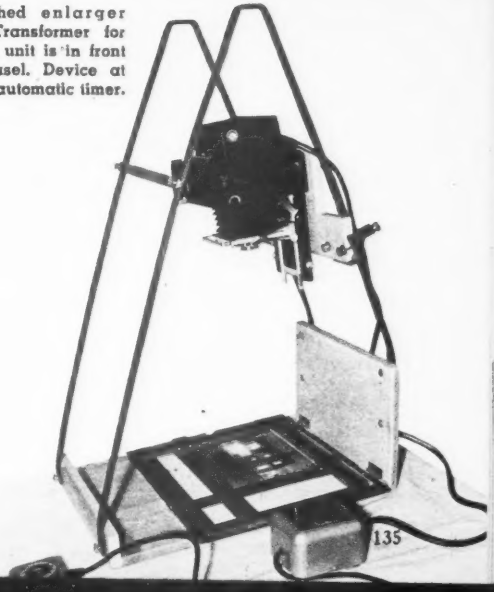
Next fasten the steel uprights to the base with ¼x20 machine screws. Nuts are finger tightened.

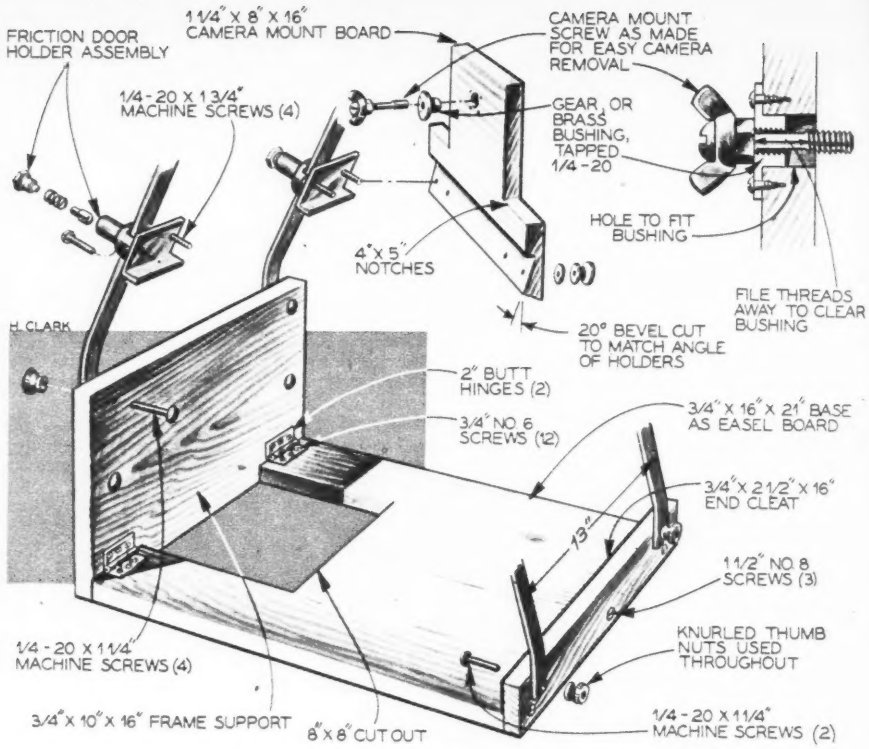
Check the camera carrier. It should be level and at a 90° angle to base at all positions.

The camera mounting base is fastened to the carrier with four No. 2, half-inch screws.



The finished enlarger stand. Transformer for cold light unit is in front of the easel. Device at left is an automatic timer.





mounting holes. These are placed 1 in. from the longer end and 1 in. and 3 in. from the other. Twenty-six inches from the end with the single hole, a No. 7 hole is drilled and tapped for a ¼x20 bolt.

An outline drawn on a piece of paper will serve as a guide for bending the metal supports to the shape shown. A husky blacksmith's hammer is needed to bend the metal cold. Heating the metal red hot will make the job easier.

A mounting screw for the camera can easily be made from a ¼x20 machine screw, a wing nut, a hex nut, and a small gear. The gear should have a hub at least ¼ in. thick and be made for a shaft of less than ¼ in. diameter. Assemble the wing nut and the hex nut on the screw. File off all except ½ in. of the exposed threads. Tap the gear and drill four screw holes for mounting.

Bore a ¼ in. hole to fit this mounting screw in the center and 2 in. below the top edge of the camera carrier. Counterbore to fit the hub of the gear. Then mount with four, ½ in. No. 2 wood screws.

Wax the metal parts to resist rust, mount the camera and the Graflarger back, adjust the tension of the friction slides, and you are ready for enlarging—the supreme thrill in photography. •

PARTS LIST

Wood

Base, ¾"x16"x21"
Hinged end, ¾"x10"x16"
Solid end, ¾"x2½"x16"
Camera carrier, 1¼"x8"x16"

Metal

Supports, ¼"x¾"x72" (2 needed)
Cross piece, ¼"x¾"x13"
2 Friction door holders
1 Camera mounting screw

Hardware

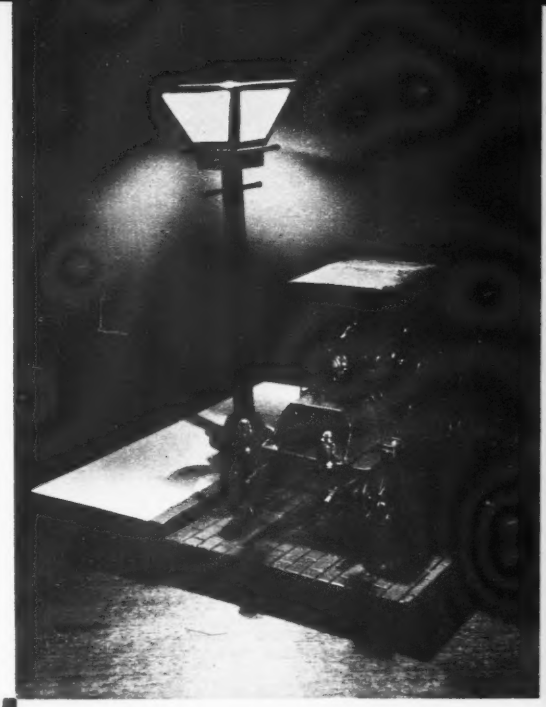
6 Machine screws, 1¼", ¼-20
4 Machine screws, 1¾", ¼-20
2 Machine screws, ¾", ¼-20
12 Wing or knurled nuts, ¼-20
10 Washers
2 Brass butts, 2"
3 F.H. Wood screws, 1½", No. 8
12 F.H. Wood screws, ¾", No. 6
4 Rubber-covered tacks
1 Small spirit level

Auto Bug's Night Light

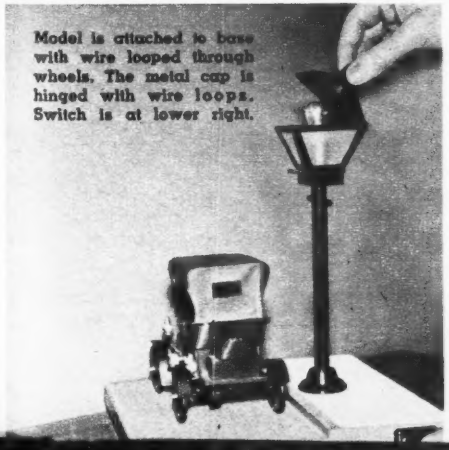
UTILIZE your favorite auto model by making it the focal point of a striking TV lamp. We'll only discuss the base, as you'll be able to supply the model yourself.

The base is soft pine, ¾x10x10 in. Recess the "street" area $\frac{5}{16}$ in. Score the cobblestones and curb blocks with a ⅜-in. chisel. Bore a hole to receive the wire, and cut a channel under the "curb."

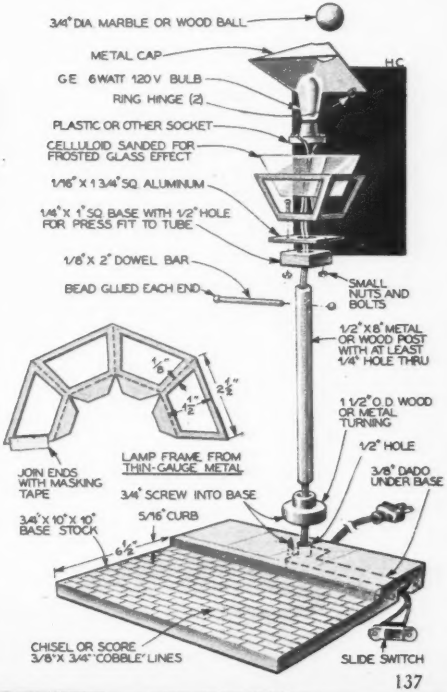
Sand the entire base, then apply a few coats of white wood filler. When dry, paint [*Continued on page* 163]



Above: 1902 Franklin provides nostalgic centerpiece for unique lamp. Left: Even when not used as light source, unit is an attractive display.



Model is attached to base with wire looped through wheels. The metal cap is hinged with wire loops. Switch is at lower right.



The Amateur Telescope Maker's Page

Conducted by

Robert Brightman

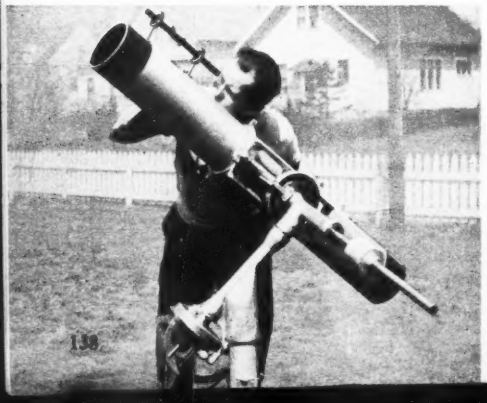
This telescope, built by B. A. Heimmermann of Appleton, Wisc., was designed with mobility and steadiness in mind. The clock drive consists of a six-volt auto heater motor connected to a toy train transformer, which in turn is hooked up to the house current with an extension cord.

Mobile Clock Driven Telescope

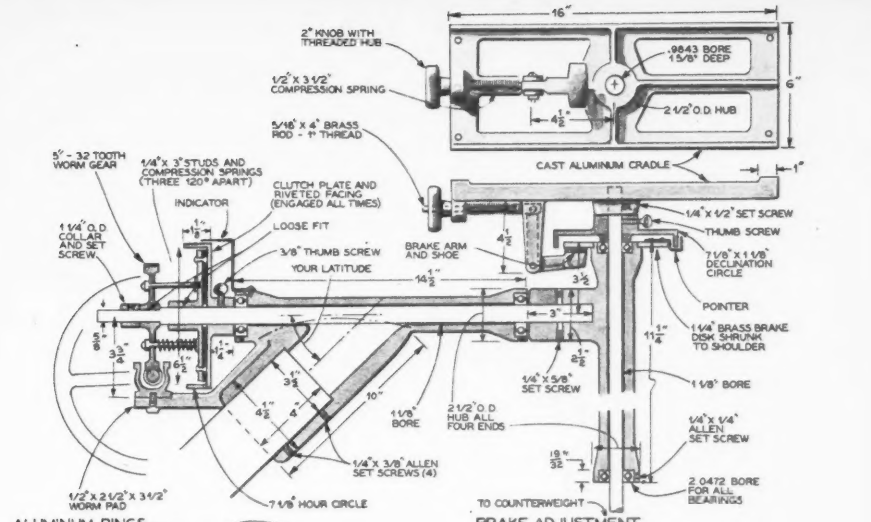
THE prototype of this telescope originally appeared in the July, 1949 issue of MECHANIX ILLUSTRATED. It was an instrument which Ben Heimmermann built with the aid of MI Plan No. P-6. Having been bitten by the bug more than three years ago Mr. Heimmermann really went to town on this job.

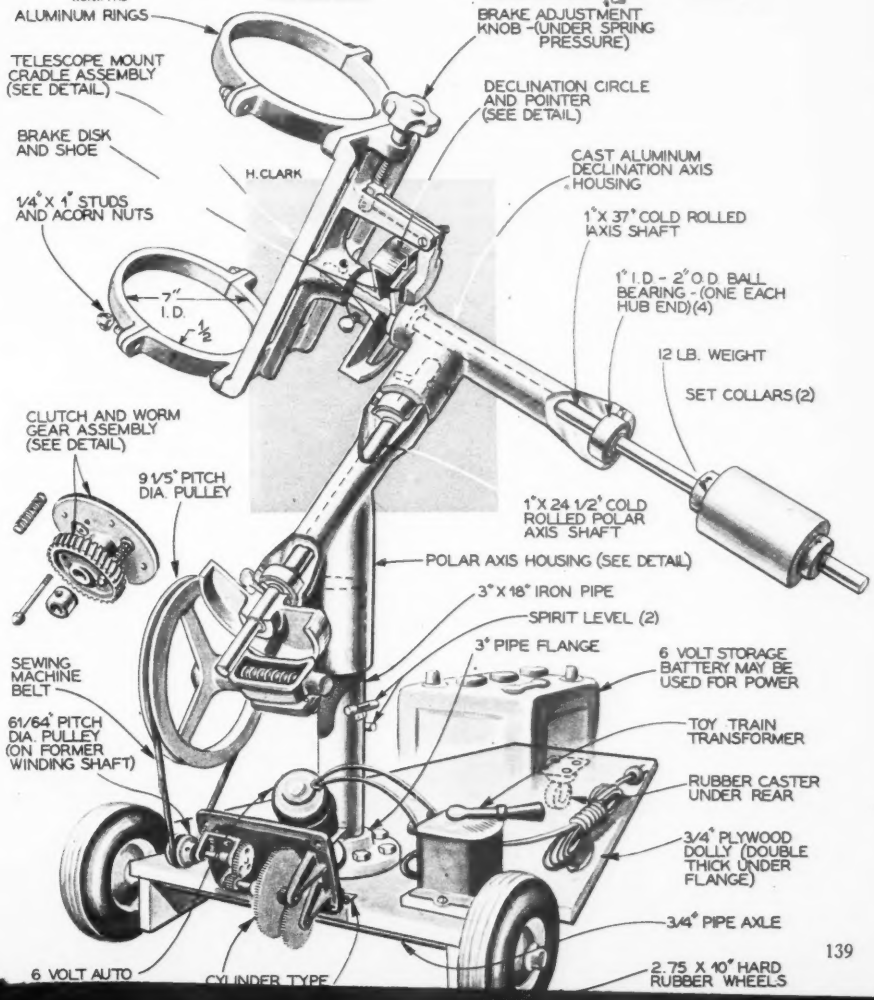
The clock drive on this telescope consists of a six volt automobile heater motor connected across the low voltage side of a Lionel train transformer. The transformer in turn is hooked up by means of an extension cable to the house current. The motor drives a phonograph unit from the governor end (governor and main spring were removed). The output pulley is fastened to what was [*Continued on page* 174]

Three set-screws in two tandem rings serve to collimate the finder telescope with main tube.



Cost of bearings and shafting amounted to eight dollars. Machining took four months of spare time.


16"
2" KNOB WITH THREADED HUB
.9843 BORE 1 5/8" DEEP
1/2" X 3 1/2" COMPRESSION SPRING
6"
4 1/2"
2 1/2" O.D. HUB
5/16" X 4" BRASS ROD - 1" THREAD
CAST ALUMINUM CRADLE
1"
5" - 32 TOOTH WORM GEAR
1/4" X 3" STUDS AND COMPRESSION SPRINGS (THREE 120° APART)
CLUTCH PLATE AND RIVETED FACING (ENGAGED ALL TIMES)
INDICATOR
1/4" X 1/2" SET SCREW
THUMB SCREW
1 1/4" O.D COLLAR AND SET SCREW
LOOSE FIT
3/8" THUMB SCREW
BRAKE ARM AND SHOE
7 1/8" X 1 1/8" DECLINATION CIRCLE
YOUR LATITUDE
14 1/2"
3 1/2
POINTER
3"
1 1/4" BRASS BRAKE DISK SHRUNK TO SHOULDER
1/4" X 5/8" SET SCREW
1 1/8" BORE
10"
1 1/8" BORE
2 1/2" O.D HUB ALL FOUR ENDS
1/4" X 1/4" ALLEN SET SCREW
1/4" X 3/8" ALLEN SET SCREWS (4)
19/32"
2.0472 BORE FOR ALL BEARINGS
1/2" X 2 1/2" X 3 1/2" WORM PAD
7 1/8" HOUR CIRCLE
TO COUNTERWEIGHT


ALUMINUM RINGS
BRAKE ADJUSTMENT KNOB -(UNDER SPRING PRESSURE)
TELESCOPE MOUNT CRADLE ASSEMBLY (SEE DETAIL)
DECLINATION CIRCLE AND POINTER (SEE DETAIL)
BRAKE DISK AND SHOE
H. CLARK
CAST ALUMINUM DECLINATION AXIS HOUSING
1/4" X 1" STUDS AND ACORN NUTS
1" X 37" COLD ROLLED AXIS SHAFT
7" I.D.
1/2
1" I.D - 2" O.D BALL BEARING - (ONE EACH HUB END) (4)
12 LB. WEIGHT
SET COLLARS (2)
CLUTCH AND WORM GEAR ASSEMBLY (SEE DETAIL)
9 1/5" PITCH DIA. PULLEY
1" X 24 1/2" COLD ROLLED POLAR AXIS SHAFT
POLAR AXIS HOUSING (SEE DETAIL)
3" X 18" IRON PIPE
SPIRIT LEVEL (2)
3" PIPE FLANGE
6 VOLT STORAGE BATTERY MAY BE USED FOR POWER
SEWING MACHINE BELT
61/64" PITCH DIA. PULLEY (ON FORMER WINDING SHAFT)
TOY TRAIN TRANSFORMER
RUBBER CASTER UNDER REAR
3/4" PLYWOOD DOLLY (DOUBLE THICK UNDER FLANGE)
3/4" PIPE AXLE
6 VOLT AUTO
CYLINDER TYPE
2.75 X 10" HARD RUBBER WHEELS

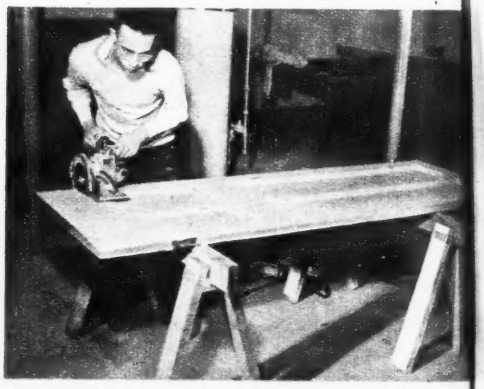
MAKE YOUR OWN FLUSH DOORS

The finished product: An up-to-date flush door made from a battered unit purchased at a wrecking firm. A coat of paint will finish the job.

If you're working with an old door, first remove all hardware, including knobs, lock, hinges. Carefully measure your frame and cut door to proper size.

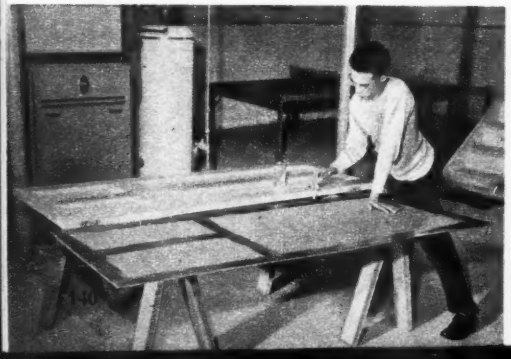
IF you still have old-fashioned paneled portals in your home, and wish they were modern flush doors, here's an inexpensive and satisfying method of transformation. This procedure also applies if you want to fill a vacant door frame, in which case you can buy a used door from a wrecking company and cut it to size.

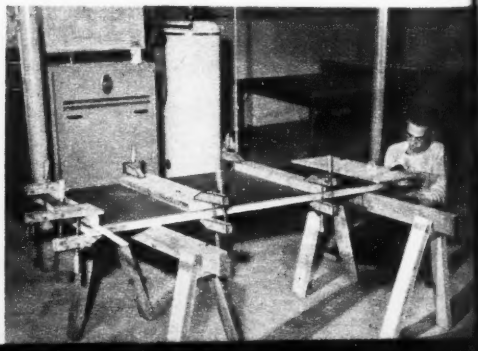
The only materials you'll need for the job are two sheets of Masonite for each door, a good grade of glue, some clamps, and a can of paint.—*Bill Cartwright* •



Align panel, then clamp tightly. Permit glue to dry for 24 hours. This door was faced only on one side, but you can cover both if desired.

Cut the panel to size and apply a liberal coat of glue to both the door and the panel. You won't need nails or other fastening devices.





Deuces Wild

[*Continued from page* 96]

gists claim their I.Q. is as high as anybody's, yet very few twins indeed have ever achieved enduring pre-eminence in any field. With the possible exception of Cleopatra and Louis XIV, whose twin was reputed to be "The Man in the Iron Mask," no person of multiple birth has ever ascended to a throne or become a president or a dictator.

Twenty years ago the Piccard identicals, Auguste and Jean, achieved scientific fame by ballooning into the stratosphere. When they had narrow escapes during their flights superstitious folk muttered about the duo jinx.

Probably because they become so dependent upon one another during their formative years, twins in general are considered poor marriage risks. When one set of duos marries another pair, there frequently is Hell to pay. Too much confusion!

Look-alikes Lois and Louise Coats of Los Angeles saw double—*twice*. They marched to the altar with *two* sets of twins. Both double marriages were severed by court action.

A twin tragedy that shocked the nation two years ago was the murder of 14-year-old Sally Richard by her fraternal birthmate, Alice, in Fresno, California.

"My sister was stupid and loud, always acting like a goon," Alice explained after she'd held a rifle to the sleeping Sally's head and pulled the trigger. "I had hated her for a long, long time."

The Richard case—like the Romulus and Remus myth and like another California sensation in which an identical twin drowned his brother—proves that humans of multiple birth can occasionally resent instead of love one another. For the most part, however, they are linked by strong bonds of affection and put up a united front against the whammy superstition inflicts on them.

Few twins, if any, spend much time worrying about the supposed jinx. Most of them possess an active sense of humor.

The Piccard boys worked up a wonderful gag during their college days. Smooth-shaven Auguste would walk into a barber shop where they were unknown, boast he had the world's fastest-growing whiskers, and wager that within two hours he could return with a full-grown Vandyke. At the end of the elapsed time, of course, Jean appeared sporting a five-inch beard.

After paying off the bet, the goggle-eyed barber would invariably dash out to the nearest bistro for a brandy. No, a *double* brandy. •

Many Happy Returns

[*Continued from page* 74]

experimenting with all kinds of ink, but to no avail. The damage was done. And that killed the order. Their money was just about gone.

The only thing that kept them going was the fact that Rosalind was able to get some free-lance work and Fred scouted up a few poster orders.

In 1947, the couple had licked the ink-drying problem. By now they were flat broke. But, they decided to give it one more try. If they failed, they'd give up the ghost forever.

An assortment of eight everyday cards was designed by Rosalind. Fred took samples around to some New York stores. One ordered 30 dozen. Another 35 dozen. Georg Jensen, an exclusive New York store, gave Fred his biggest single order for $112 worth of Christmas cards.

As a result, Fred was able to buy a printing press to do the embossing. He ran it and Rosalind helped. Working late into the night, seven days a week, they got all their orders out. That year they did a gross of $12,000.

Encouraged, they moved to larger quarters. Rosalind began experimenting with studio-type humorous cards and Fred spent a great deal of time developing a larger embossing machine which he designed and built.

Today, Panda Prints is producing over seven million cards a year, and gross sales amount to about $500,000 a year. They feature 250 different designs which range from birthday, Christmas and Valentine greetings to the various general subjects and sell in 2,500 selected retail stores for 5 to 15 cents.

Rosalind designs the cards and also writes all the verse and captions. Fred handles the mechanical and production details.

How does Rosalind get her ideas? They stem from almost every source. Mostly, though, she burlesques simple situations, radio and TV shows and newspaper ads.

One day, while visiting an art gallery, Rosalind was attracted to a painting of Whistler's Mother. When she got back home she did a take-off on the painting. It was a satirical sketch with the caption: "You may not be a Model Mother." And then on the inside spread there was the drawing of a mother reclining in a hammock, drinking a cocktail, smoking a cigarette from a long holder and reading a book. The caption read— "but I wouldn't want another."

"Undoubtedly many people are shocked by a card like this," said Fred, "but enough people appreciate good-natured spoofing to make our cards an enormous success." And if the proof is in the selling, Fred's words certainly tell the story. •

The French Citroen

[*Continued from page 87*]

with you in the middle. As this is being written I have nearly 3,000 kilometres safely on the clock and have just crossed the French Alps on my way to Italy. In the mountain passes it is unbelievable how this car stays in the groove.

The brakes are good but the seats on long runs get as hard as a glass washboard. Even though it wouldn't be half as safe and in fact not half as fast on the mountain passes, after 200 miles even Joe, who is pretty solid, would give his right ear for the comfort of an American Ford. These are great cars for short hops up to 200 miles but after that an American balloon ride would be pretty relaxing.

At $1,400 the Citroen is a hell of a buy. I can think of no car that would be better for crowded city traffic or twisting country roads but it does have some real drawbacks. The steering, as in most front-wheel-drive cars, is much stiffer than in conventional ones. It has an amazingly poor turning radius for complete turns or parking, which has nothing to do with its fine turning and corner hugging ability on the road. Frankly, I would far rather park a Cadillac in a small opening by the curb than wrestle this pint-size goat into the same space. To make a complete circle requires a junior size airport.

The gearshift mechanism is on the dash or instrument board, making it halfway between a floor and steering column shift, and the Citroen is no better off for the compromise. The shift is awkward, which means gear-crashing is a cinch. The choice of colors, however, is a real feature. You can buy a standard Citroen in any color your heart desires, providing your heart desires a black car with cream color wheels. If some eccentric painted one of these jobs red, half the cows in France would give sour milk for a month. For a country so arty and color-conscious as France, it is amazing to see one of its major manufacturers in such a rut. How much extra would it cost to run a few through in blue, yellow or good old Tickle Pink? But there *are* three excellent wrinkles that deserve mention. One is the large cowl vent, the second is the windshield that cranks forward, allowing plenty of fresh air, the third is a complete spark advance control knob on the dash.

I've learned one thing in France, though, that has seriously given me a lot of cause for thought. In Paris they now have traffic jams that make Times Square at lunch hour look like a deserted desert. Around the Arch of Triumph, six lanes of cars are always whizzing by at real speed, all going in different directions and, so help me Hannah, it would scare the pants off the most hardened American stunt driver. Crossing the Place de Concorde, commonly known as the Rat Race, it is quite a sight to see a steady line of cars traveling at around 50 literally criss-cross other cars going 50 and traveling at right angles to them. They weave and duck, sometimes missing broadside smashes by a gnat's whisker, but the point is they do miss.

In the balmiest days of cowboy driving that Wilshire Boulevard in Los Angeles ever had, I have never seen such a business. Weaving in and out is child's play and as common as grass but this criss-cross, no-stop, converge-from-every-angle, fast-moving traffic got me groggy. The cops stand by and never interfere. They seem to be there just to act as arbitrators in the event of a crash. But in hours of watching, I never saw a fender nicked. You will see more dented and smashed fenders in a single city block in New York than you will find in a week of driving around Paris.

Some guy once said that the period of prohibition in this country created more drunks than we ever had before. I am seriously wondering if our over-simplified, over-controlled traffic regulations are not partially to blame for many of our highway fatalities. In Paris every driver has to be as sharp as a razor at all times just to stay alive. Pedestrians have no rights at all, so they rarely get run over. In our United States, where everyone expects everyone else to obey stop signs, pedestrian rights and all other rules of the road, pedestrians and motorists alike get killed by the thousands. The very fact that Parisian drivers must make their own decisions and be twice as sharp as our drivers just to survive may mean they are twice as good as our typical drivers. I'd sure like to have one of our so-called safety experts spend a week driving around Paris on the crowded, no-speed-limit highways and then explain why every French driver isn't dead two weeks after he gets his license.

Getting back to the Citroen, this is a different car than any we have ever tested before. All things considered I think it is a truly great piece of transportation. The price of $1,400 in Paris makes it a good buy but to those who bring one back or import one to the U. S. there is a major service problem. I have been told (though not officially) that the Citroen people are not too anxious to sell these cars in the States because they feel the lack of a proper service set-up from coast to coast would reflect badly on the company, and no one has come along with enough dough

to set up such a network of stations. Frankly, despite this, if I was interested in something different and had the green stuff to spare, I'd buy a Citroen. When I got tired of creaming the boys on hairpin hills, I could have a lot of fun reworking it into a red-hot formula sports car.

As it is, the Citroen will carry four people comfortably and with the small trunk and an added Continental baggage rack (a must) you can go anywhere in the country on a bucketful of gas.—Tom McCahill. •

'52 Nash Ambassador

[*Continued from page* 81]

grade has a fast twist at the bottom and quickly goes from about a 12 degree pitch to 26 degrees a quarter of a mile beyond. Of the dozens of cars I have driven on this, only two ever made it all the way in high gear. One was my Caddie 61 with three-speed synchromesh and the other was this new Nash Ambassador. Actually, the Nash with the two-speed rear axle of overdrive had it a lot easier than the Cadillac. Anyway, no other overdrive car ever even came close to climbing that hill in high. A special V8 Chrysler with a three-speed Cadillac transmission, and even the M.I. Ford, were stopped in their tracks by this little slope. So it was quite a ball of amazement when the not-too-highly powered Nash went right up without a buck.

By now, many of you know that a Nash-Healey finished third at Le Mans, France, in the famous 24-hour race. This is a tremendous testimonial for the Nash Ambassador engine. I spoke to Donald Healey the day the race started and he told me he'd be happy to finish in the first ten and had no hopes of winning at all. The Nash Ambassador engine really has a better post-war record at Le Mans for consistency and reliability than any of the hot shots including Ferraris, Jags or Allards.

This year's third-place Nash-Healey, which was beaten only by two Mercedes-Benzes, actually looks as much like the American showroom Nash-Healey as I look like Betty Grable. Regardless, the fact that the Nash Ambassador engine, with the Healey touch, beat five souped-up Chrysler V8 engines, cannot be overlooked. The Allard entries this year had V8 Chrysler mills and so did the three Cunninghams. The Cunningham coupe was the fastest car on the course but when running easily in second place was put out by a failing valve-keeper. The other Cunningham to go out also had valve trouble which left old Ironman Briggs Cunningham to carry the mail, finishing fourth.

Rather than risk not having a car running at the end of the 24 hours, Briggs backed way off to here and coasted for almost 20 hours. When he finally turned the car over to his co-driver Bill Spear, Bill quickly made up three places in less than an hour. But he was under strict orders limiting speed. If given the car earlier and with a freer hand, he might conceivably have not only edged the Nash-Healey out of third place but also knocked off one of the Mercedes as well. Briggs Cunningham, America's Mr. Sports Car, wanted to take the blame himself if his car failed and after his two fastest entries went out, who could blame him for backing off and assuring himself an automatic entry for next year? (To be assured of an invitation to Le Mans, the world's biggest auto race, you must have a car that ran the full 24 hours the year before.)

This year's race was the old tortoise-and-hare story all over again. Before the race was one-third over, all the real hot shots had burned themselves out. The two Mercedes, like the Nash-Healey, ran magnificently planned races but even these call for a certain amount of luck. For instance, a little over an hour before the 24 were up, a French Talbot was creaming the Mercedes and running in first place. Reputedly, at its last pit stop, the Talbot crew forgot to check and add oil, causing the French car to burn up a bearing when actually within sight of winning! It takes a lot of luck to win a Le Mans race but the fact remains it takes a hell of an engine to place third at an average speed of 90-plus for the 24 hours and that is what the Nash engine did.

This year's Nash line is by far the best that Nash has ever offered and that's saying a lot. The Nash Ambassador is a magnificent riding car, big as a house boat but better on the hills. It corners reasonably well for a balloon-type design and Le Mans again proved the reliability of the power plant. As soon as this is in the mail to Bill Parker, I'm heading for Farina's body shop in Italy to find out what's on the stove for next year. I am writing this in France but just before I left the States, I put in one pitch with the Nash brass I wish they'd listen to. Nash has Farina under contract for some time, so I said how about giving him a real free hand, no holds barred, on next year's Rambler? If they do, which is doubtful, I'll bet they'll have the hottest selling car since old Henry introduced the Model T.—*Tom McCahill.* •

NEXT MONTH—
McCahill tests the Hudson Hornet

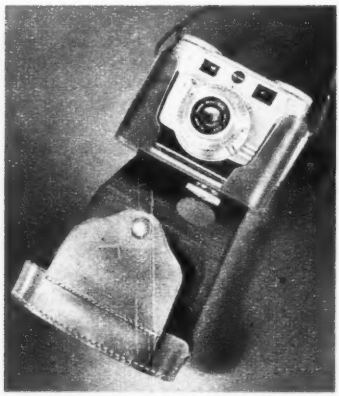
A Kodak Miniature Color Camera—there's one for every budget

Fine, extra-thrifty "miniature"—The budget-priced Kodak Pony 828 Camera gives sharp black-and-white negatives . . . superb color slides on Kodachrome Film . . . gorgeous Kodacolor snapshots. Kodak Anaston *f*/4.5 Lens (Lumenized); Kodak Flash 200 Shutter with built-in "synch." Takes 8-exposure rolls. $31.15. Kodak Field Case, $7.00. Pony 135 Camera for 20- or 36-exposure 35mm. film, $35.75. Kodak Flasholder fits both cameras, $10.55.

Smallest of the "miniatures" . . . and one of the best—The palm-size Kodak Flash Bantam *f*/4.5 Camera takes 8 exposures on black-and-white Kodak 828 Films, Kodachrome or Kodacolor 828 Film. Lens is superbly corrected Kodak Anastar *f*/4.5 (Lumenized). Flash synchronization is built into the 1/200 shutter. Automatic film stop and body shutter release make for fast, simple operation. $56.00. Kodak Flasholder, $10.55. Kodak Field Case, $7.00.

How to make the most of Autumn's

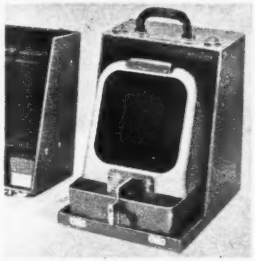
Every golden field, every fiery maple cries out to be "snapped" in color. So be sure to take along your camera—and plenty of color film—on Fall outings. You'll see great picture possibilities at every bend in the road.



Precision range-finder "miniature"—The Kodak Signet 35 Camera, with world-famous Ektar Lens (*f*/3.5), produces sharp, brilliant color slides for projection or full-color prints with 20- or 36-exposure Kodachrome 135 Film; also clear black-and-white pictures with Kodak 135 Films. Has feather-touch shutter release bar, shutter with speeds up to 1/300, built-in flash synchronization. $92.50. Flasholder, $10.55. Kodak Field Case, $8.50.

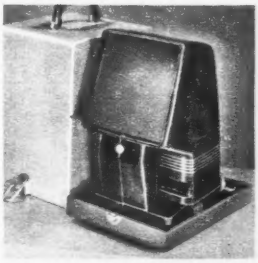
Ultra-fast "miniature" in a new model—The Kodak Retina IIa Camera now features rapid film-advance lever, built-in flash. Also has fast *f*/2.0 coated lens in a 1/500 shutter, range and view finder combined in a single window, automatic double-exposure prevention, film stop, and counter. Takes 20- or 36-exposure black-and-white Kodak 135 Films or Kodachrome 135 Film. $164.10. Flasholder, $10.55. Kodak Field Case, $10.50.

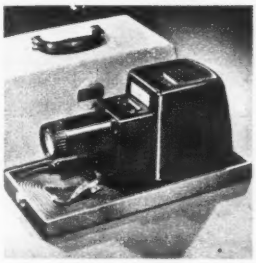
A projector or viewer—to show your color slides at their brilliant best



Kodaslide Table Viewer, Model A—Projector, screen, slide changer in one compact unit. Projects brilliant images even in a lighted room. Takes 75 cardboard or 30 double glass slides. $97.50. Carrying case, $27.50.

Kodaslide Table Viewer, 4X—Enlarges slides over four times on built-in screen. No fuss, no bother. Just snap it on and enjoy your handiwork. $49.50. Carrying case, $15.50.





Kodaslide Merit Projector—Budget-priced instrument for brilliant screenings. New jar-proof slide feeding; Kodak Projection Ektanon Lens, 5-inch *f*/3.5 (Lumenized); built-in elevation device; cool operation. $26.10. Carrying case, $9.50.

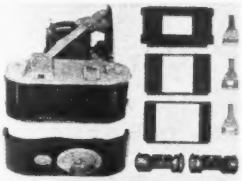
Kodaslide Projector, Master Model—Fast lenses and 1000-watt lamp can deliver more light to screen than any other 2x2-inch slide projector. Turbine-type fan cools both sides of slide. Choice of 4 projection lenses. From $169.00. Carrying case, $50.00.

color-picture opportunities

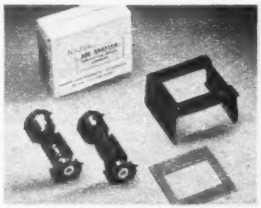
Some suggestions for the perfectionist

If you want your subject to stand out sharply against a dark blue sky in color pictures, use a Kodak Pola-Screen. From $6.75. Kodak Pola-Screen Viewer for previewing effect, $6.75.

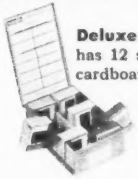
Kodak Skylight Filter—"Warms up" many color pictures. $1.65 up. To cut bluishness in flash pictures with Kodachrome Film, Type A, try *Kodak Light Balancing Filter 81C*. From $2.07.



Inexpensive kits adapt Kodak Tourist and Reflex Cameras for Kodachrome Film—Kodak Tourist Adapter Kit for deluxe model "Tourists," $13.25 (*left*), and the Kodak 828 Adapter for Kodak Reflex Cameras, $4.59 (*right*), permit picture-taking in full color on Kodachrome or Kodacolor 828 Film.



Kodak Auto-Release—Trips shutter, gets the photographer into the picture. $3.86.



Deluxe file—Kodaslide Compartment File has 12 swing-out compartments for 240 cardboard or 96 glass slides. $3.94.

Protects valuable slides—Inexpensive metal Kodaslide File Box holds 150 cardboard or 53 glass slides. $1.57.

See your Kodak dealer for all your photo needs.
He'll be happy to "talk shop" anytime you drop in.

Prices subject to change without notice and include Federal Tax where applicable.

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Kodak
TRADE-MARK

Blow Yourself To A Fortune In Natural Gas

[*Continued from page* 55]

components can be converted into an amazing variety of products, such as new miracle fibers like dacron and orlon, plastics, explosives, insecticides, deodorants, perfumes, solvents, alcohol and an untold number of drugs. Said one top-notch scientist recently: "If one starts with natural gas, all the known synthetic products that man has developed in organic chemistry—and there are over 500,000 of them—can be derived."

These are just a few of the reasons why some of the hottest competition ever known in the history of American private enterprise has cropped up within the last few years over natural gas.

Ten years ago, a pipeline company for natural gas was an oddity. Many of them just struggled along, frequently losing as much money one year as they made in previous years. Today, the pipeline industry for transportation of natural gas has dozens of new companies which are now making fortunes.

Natural gas is probably responsible for more genuine rags-to-riches stories than any known discovery in recent times. Around 1931, Wade Thompson, born on a Tennessee farm and tired of holding one unsuccessful job after another, suddenly got the idea that natural gas ought to be piped into key Tennessee towns. The first time he had actually seen natural gas was back in 1921. "I was impressed by its cleanliness," he recalls.

Thompson tried hard to get financial backing for a pipeline but his first company was a bust. He suffered all kinds of abuses, even to the extent of being called a crackpot promoter.

"As far as the public could see," says Thompson, "I was a complete failure the first 10 years. I might as well have been promoting a rocket trip to the moon. There were days when I didn't have the price of a haircut or a bowl of soup for lunch."

But Thompson, his faith in the future of natural gas unyielding, persisted in his efforts and, just prior to the war, got financial backing to organize the Tennessee Gas Transmission Company.

Things are different today—the firm's holdings are now worth $50,000,000 and Thompson smiles when he recalls the days when he was called a screwball.

How solid is the real future of natural gas? Every time a new discovery is made, some cynics (probably regretting they were not in on the original prospect) proclaim that the boom can't last for very long; the natural gas wells will dry out in a few years.

But the cold facts are different. One conservative authority estimates that there are more than 500,000,000,000,000 cubic feet of natural-gas reserves in this country. At the present rate of supply and demand, this is enough to last at least 70 years. But there is another important fact: new and fabulous amounts of natural-gas pools are being discovered every year at a greater rate than ever before. Recently discovered reserves in the East, particularly in New York, Ohio, Pennsylvania, West Virginia and Maryland, are said to be greater than the original discoveries of natural gas there years ago.

So far, natural gas has been found in more than 30 states, although some of the biggest known reserves are concentrated in the Southwest and in states around the Appalachian area. In about 30 per cent of the discoveries, natural gas is associated with the presence of oil. But it is often found existing by itself and not infrequently after lands were abandoned following the depletion of oil reserves.

How do you prospect for natural gas? The major companies, of course, do it with all the latest scientific equipment and come up with what they call a "seismic survey," about the most hush-hush information in industry today. They're getting real competition, however, from individuals who form tiny associations of backers, hire geological consultants in potential gas areas and then wildcat wells on their own.

A successful gas strike means an almost instantaneous bid from a big company to buy up the gas outright or lease the land for additional drilling. But so new are most gas discoveries and so fast do the major corporations step in to buy that the overwhelming number of discoveries haven't even had a chance to get recorded.

However, there's a new twist to the get-rich-quick fever. It's in the form of land speculation. Because many potential natural gas areas are found in remote or abandoned sections, land is so cheap that speculators buy it up by the thousands of acres, then sit tight until a nearby discovery is made, boosting land values in the entire section to sky-high figures.

Until recently, some shrewd promoters advertised an offer to get speculation-minded suckers tracts of government-owned land in oil-and-gas rich areas of the West for fees ranging from $100 to $200 per tract. The response was so tremendous that the government had to call a temporary halt to its program of leasing such land.

[*Continued on page* 160]

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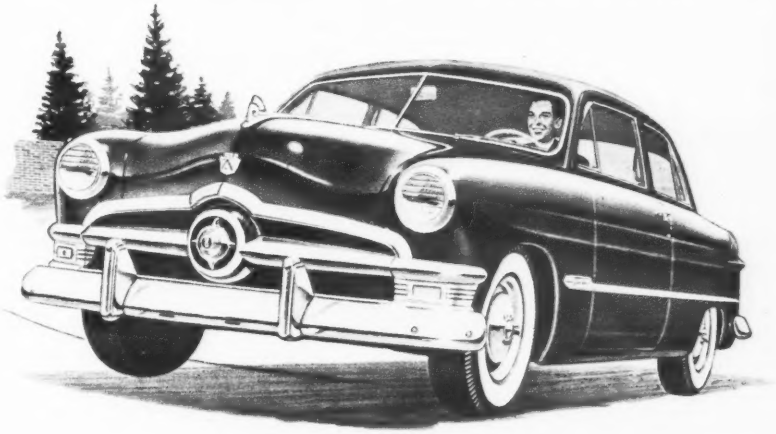

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Available at all Ford Dealers and selected independent garages. Look for this sign

Drive in where you see this sign

LET'S GET ACQUAINTED

M. I.'s Vacation Home

[*Continued from page* 102]

erence. We chose concrete with a resilient tile floor to withstand the abrasive action of sand and gravel tracked in by dogs and boots. We figured we could save money by pouring the porch, floor, fireplace foundation and septic tank in one sweep. Our total concrete work cost $266.50, of which about 40 per cent was for sand and gravel fill.

One of the first things we had to determine was the depth of the frost line. We found that it varied from a few inches beneath the cedars, where the ground was well protected in winter, to a possible 4 ft. in open fields during a period of sustained bitter cold. We didn't want the frost to freeze our water line or toss the fireplace around, so we planned for the worst and went down 4 ft. A fireplace foundation 4 ft. deep and 8 ft. square is a powerful big hole to fill. We economized on concrete by alternating a layer of rock with a layer of concrete and tamping it down firmly in the crevices.

The floor and porch we poured by sections into a solid slab 3 to 5 in. thick over a foot or more of gravel fill with substantial footings all around. During this operation we also poured the septic tank, using a double form for the walls. We found our information on making septic tanks from M. G. Kains' book, Five Acres And Independence, and from the Portland Cement Association in Lansing, Michigan. We believe we really saved money on this operation. A 500-gallon metal tank alone costs $80 or more. We used scrap lumber for the forms and about $15 worth of concrete. Cast iron soil pipe and drain tile cost another $50. We leaded the joints in the sewer pipe by melting the lead in a frying pan with a blowtorch. This provided our entire sewage disposal system for about $65. In place of expensive cast iron soil pipe with leaded joints, you can use bell and spigot tile, sealing the joints with oakum and concrete. You can also make your septic tank of precast concrete blocks.

We framed in by putting together wall sections on the ground and raising them in one piece. We notched the 2x8-in. roof beams over the top plate so a 2x6-in. bridge between beams would seal the opening. To strengthen the roof and front frame we bolted two 2x8x8's to the front wall and to the roof beams on the inside about 6 ft. apart above the window. When laying the roof beams, put the hump edge up.

Framing is spectacular work after grubbing around in the ground for a few weeks. Your place now starts to take shape, and it certainly is encouraging. We slapped on the ½-in. rigid insulation in no time and the roof went almost as fast. We set the roof beams on exact 2-ft. centers, covered them with ½-in. white-sided rigid insulation, white side down, in 4x8-ft. sheets, and nailed 1-in. rough lumber through the insulation to the roof beams. We worked up the roof in 4-ft. jumps, marking a nailing line on the insulation along each rafter.

Now you can move in, if you are so inclined. We did. It was a little chilly, so we sealed off the door and window openings, installed an overgrown coal stove inside and set up shop to carry on under cover. This is the usual practice in Northern Michigan, where the building season lasts about as long as a three-straw soda in the third grade.

At this point we started making doors and installing windows. With materials ranging in cost from $3 to $15 we made doors which would have cost from $10 to more than $75. Our main front door was made in Dutch door style by an old friend who paid us a flying visit. For the main door we had left an opening more than 3 ft. wide. Our friend vanished the next morning and returned at dusk with a 3-ft.-wide Dutch door made of 2-in. tongue-and-groove cedar planking. The planks were glued and each section was held rigid with two ⅜-in. threaded rods through top and bottom. The sections were rabbeted for a weathertight fit where they met in the middle. Later on we intend to install a porthole in the top section.

The other two outside doors are a solid 1¼ in. thick. We made a 1x4 frame, filled in the panels with scrap ½-in. insulation backed by ¼-in. plywood, and sandwiched this between two sheets of ¼-in. plywood. The assembly is held together with about 50 small carriage bolts. Inside doors we made with a facing of cedar paneling and center panels of ¾-in. plywood, rimmed with 1x4 uprights and 1x6 crossbars. These are held together with about 60 screws and a few nails. The closet door we made of paneling backed by crossbars.

Picture windows can be expensive because of the terrific markup necessitated by risk of breakage among large sheets. Contractors who buy glass in box lots and accept the risk of breakage receive discounts ranging up to 80 per cent. We bought a box of 6 sheets of 48x52-in. single-strength window glass and received a substantial discount on the retail price of $169.25. With this glass and four inexpensive breezers we made three picture windows which would have cost more than $100 each. We accepted risk of breakage and found one sheet with a tiny chip, but since we had to

[*Continued on page* 150]

Here it is—tomorrow's outboard today! Drive it and see why the new Mercury Cruiser is bound to be copied. For here is an outboard that gives you *more* performance than others of two to three times its rated horsepower—with up to 30% *less weight!*

The New "Cruiser" is another product of Mercury's CREATIVE ENGINEERS . . . men who steer clear of "dead tradition" . . . who are never satisfied with "*good enough*". Thanks to their progressive spirit Mercury outboards OUTPERFORM ALL OTHER MAKES!

See your Mercury dealer for *one* convincing demonstration and you'll *own* tomorrow's outboard today!

Write for free illustrated catalogue—"Move Up To A Mercury" KIEKHAEFER CORPORATION, Fond du Lac, Wisconsin.

REVERSE GEAR AND NEUTRAL—A gear shift that really works—engineered for outboards only. Salt water proof. Stays in adjustment. Meets Mercury's rigid standards of performance.

TWIST GRIP SYNCHRONIZED SPARK AND THROTTLE—New longer steering handle for easy control.

FULL JEWELED POWER—*ball and roller bearings throughout.*

Features of Mercury Motors are protected by issued or pending patents.

Move up to a

KIEKHAEFER

MERCURY CRUISER

The outboard that will still be copied years from now!

M. I.'s Vacation Home

[*Continued from page* 148]

trim seven inches from four of the sheets anyway, this didn't matter.

Double picture windows—two sheets about ¾ in. apart—will prevent frosting in cold weather and will be warmer and stronger. But don't let moisture get between them. It will fog and you can't get to it. We set in the outside casing, lathered it plenty with calking compound from a gun, set in the first sheet of glass, calked it, and fastened it in place with ¾-in. nailing strips. Then we calked the nailing strips, set in the second pane, caulked it, and nailed on the inside frame. We were careful to clean the inside faces of the glass before setting the panes in place and were doubly careful in handling the stuff. It may break of its own weight unless held straight up and down with a firm grip on the top or, better still, by the edges. When laying it on a table, get up high and set down one edge first.

We installed the front window full size, with step-down breezers on each side. The rear window we cut down to 41 in. on a level with the breezers, and made the kitchen window the same size.

You may shudder when you think of cutting glass that size, and well you might. It's a tricky business. We used a 4x8-in. panel of ¾-in. plywood as a working base and built up the center warp with paper until we had an absolutely level working area. With all our precautions we broke one sheet in cutting, and the kitchen window will remain a single window until we are fully recovered from the shakes engendered by the operation.

The time to install windows in this manner is on a hot dry day in summer when there is no humidity to be trapped in the air between the panes. But we couldn't wait that long. We put them in during a baby blizzard. Some humidity was trapped in the front window, but eventually it was absorbed into the wood under the heat of the sun.

If you don't want the risk or expense of picture windows, set two or more big breezers side by side.

By sheer accident we incorporated some of the principles of solar heating into the lodge. The building faces due east, as we discovered when we set the north point of the compass insert in our floor. The sun floods the front window with warmth in the early morning, smiles on the kitchen window in early afternoon, and slants through the rear window while going to rest behind the trees.

We arranged the four breezers to open in instead of out, making it easier to screen the outside. But breezers that open in have a tendency to leak. We stopped this by fastening a piece of base shoe to the bottoms of the breezers with glue and screws. The base shoe forms a canopy to divert the water to the slanted window ledge.

Rock for the fireplace came free. The limestone in our area sheared cleanly under concussion. With an 8-pound sledge we cracked it into slabs from 4 to 6 in. thick. We laid the hearth with limestone, used green stone to the mantel piece, and then limestone on up with a few greens to pick up the color.

Our fireplace unit had an opening of 33 in., which called for 8x12-in. flues. To the right of the main flue about 2 ft. below the roof line we started a second 8x8-in. flue for a stovepipe chimney. Steel, who was building the fireplace, knew how to do it the easy way. Instead of cutting a hole in the flue liner, a tedious task, he set the 7-in. thimble up against the flue liner and sealed in the whole thing with masonry. When masonry was set he reached into the thimble with a cold chisel and hammer and knocked a hole in the flue.

This just about covers the major exterior work. In the October MI, we'll discuss installation of utilities and the interior finish. •

How To Build Heron

[*Continued from page* 124]

accurate hull with pleasingly faired lines.

You will note that a sawed frame is located at each station. The boat is built up around these frames. After she is planked, intermediate frames are fitted. Their main purpose is to prevent any slight movement of the planking that might work the calking out.

Install the tunnel assembly before starting to plank. The 1⅝-in. stringers form the tunnel sides and 1¼x2-in. doublers on the inboard faces form landings for the tunnel planking. Take the curve of these doublers from the loft drawing. The tunnel planking runs athwartships. Fit filler pieces in way of the strut and stuffing box as shown. Fasten a 12x12-in. piece of sheet metal directly over the propeller to protect the planking from drift and gravel. It will be wise to build a small hatch above the propeller so it can be changed or cleared of drift while afloat. Dog the hatch down on a rubber gasket by means of an icebox type latch—the seal must be air tight or the prop will cavitate.

The engine shown is a 130-cu.-in. four-cylinder model developing about 25 hp. This will produce a speed of 8 mph. Drop us a note when you get the boat this far and we'll specify the proper propeller to use with the engine you have selected. •

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No matter what the job—plumbing, electrical, automotive or whatever, Channellock pliers are handy to have around. The patented Channellock principle permits a wide range of size adjustments without decreasing gripping power or leverage.

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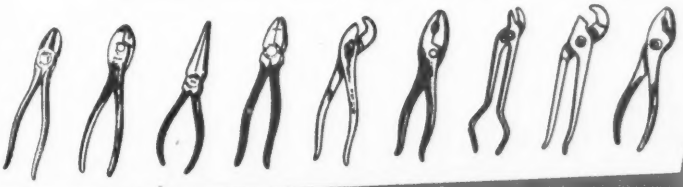


Channellock pliers are listed in the Yellow Pages of most Telephone Directories under "Tools"

Only CHAMPION DEARMENT... *makes* CHAN NEL LOCK

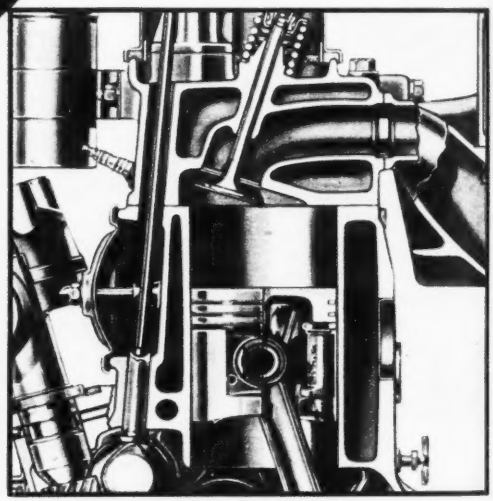
TRADE MARK REG. U.S. PATENT OFFICE

Low friction and

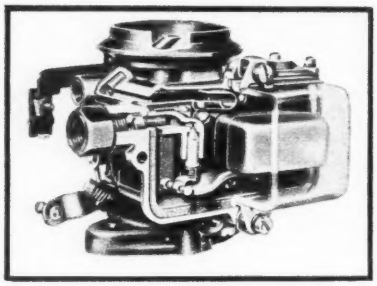
Dr. Roy K. Marshall* tells how low friction design gives you more power from less fuel.

"Suppose I drive two nails into a piece of wood, the first one inch deep, the second two inches. When I try to pull the two nails out of the wood, I find the first is almost twice as easy to pull out as the one that's hammered in two inches. That's because the first has less distance to travel and therefore less friction to overcome."

**Noted science editor, educator, and TV commentator, Dr. Marshall is nationally famous for his simplified explanations of complicated things.*



"Now the same low-friction principle has been used by Ford engineers in designing the all-new high-compression Mileage Maker Six. First they shortened the distance the pistons travel (stroke) to nearly half a mile less travel in every mile of driving, for 30% less friction and longer engine life. They designed new *free-turning overhead valves* for more even wear of both valves and valve seats and less chance of the valves sticking. *Valve guides are an integral part of the cylinder head,* not separate pressed-in pieces as in many engines. This design permits a very accurate bore and more rapid heat transfer. In fact, tests show exhaust valves run about 100° cooler."



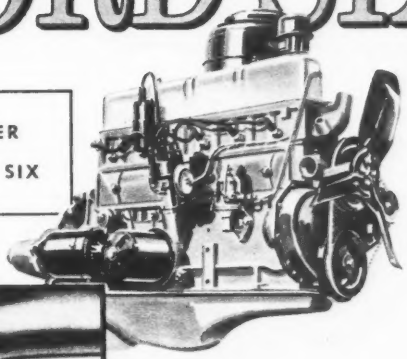
"All in all you get less friction and more usable energy . . . which adds up to more power for less money. The new Ford SIX proved this by out-saving all other Sixes in its class in the 1952 Mobilgas Economy Run.

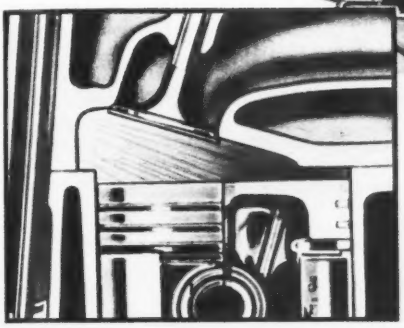
"Ford's new unit-design carburetor with compact, easily-removed metering section to simplify servicing, is part of Ford's 'easy breathing' carburetion system. The gas mixture is fed more directly into the combustion chambers through the new overhead valves."

You can pay more but you can't buy better!

the FORD SIX

101-HORSEPOWER
MILEAGE MAKER SIX





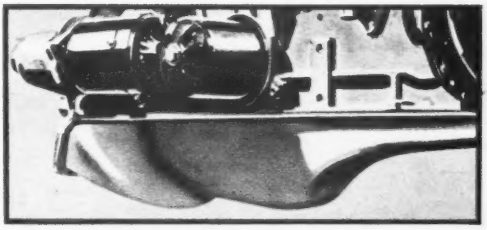
"Unlike most other engines, the Ford SIX *crankcase extends deep down below the crankshaft* for more support and rigidity. The flat base also permits a more effective seal between crankcase and oil pan.

"And Ford's *built-in filter* (exclusive with the Ford SIX in its field) cleans all the oil before it reaches vital bearing surfaces, eliminates the need for external or internal oil lines.

"For a real driving thrill, ask your dealer to let you 'Test Drive' the only all-new high-compression, low-friction SIX on the road."

"Ford's Loadomatic Ignition, with distributor driven directly from camshaft, gives more accurate timing. And the *new Power-Contoured Combustion Chambers,* with spark plugs between intake and exhaust valves, control combustion so that the fuel burns evenly, completely.

"Ford engineers call this single control of fuel feeding, spark timing and combustion the Automatic Power Pilot . . . it gives you more 'go' with regular gas."



White sidewall tires optional at extra cost. Equipment, accessories and trim subject to change without notice.

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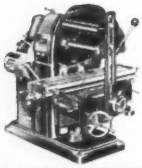
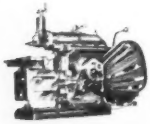


MILLING MACHINES



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Atlas are the ideal tools for machine shops, small parts production, experimental labs, and home shops. Look them over thoroughly if you need the wide range of operations they provide at low cost.

Atlas 10" lathes, for example, give you *wider speed selection* and *greater versatility* than any other low cost lathe. Timken bearings, heavy precision-ground bed ways, back-geared power, wide threading range, V-belt drive —assure you of dependable precision production and lasting accuracy. Atlas drill presses, millers, and shapers are thoroughly proven companion tools to complete your shop equipment.

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Car Care

[*Continued from page* 120]

with a volume passage to reduce the "boom" effect of its torque converter. One of the most interesting of the 1952 series of silencers is that found on Oldsmobile. Here the tri-flow design is amplified by what is called a "roughness control chamber" which lowers back pressure without increasing the noise level. Back pressure was reduced for this motor by using increased tube size, while the longer unit controlled the sound level.

Care has to be taken not to increase back pressure in an effort to reduce the sound level of the newer, more powerful engines. The problem was met in the case of the Chrysler jobs by using a double shell around the straight through muffler piping just back of where the exhaust pipe enters the unit. For the 1952 Cadillac with its 190 hp output, one tri-flow silencer behind a short straight through muffler for each bank of cylinders solves the problem. Here the front mufflers act as resonators much as they did on the earlier Fleetwood models.

But there is more to the exhaust problem than checking abnormal back pressure, lowering the sound level and eliminating automatic transmission "boom." (That is, if you object to br-br-br-brm of a snappy exhaust. Some folks like the sound.) Modern engines have heavier explosion pressures. In addition, where there is dual manifolding on V8 motors the tail pipe's sound is apt to be harsh instead of purring. Various schemes are used to muzzle this bark. In the case of silencers which reverse the flow of exhausting gases, this is accomplished by using roughness control chambers. These are also used in the straight through muffler but in a different way. Incidentally, if an exhaust has been barking loudly, switching from a conventional straight through muffler to a reverse flow or a spiral will muffle the bark. Obviously opportunities are present for auto owners to improve the sound from the exhaust by using a different type of muffler when a replacement is needed.

Keep in mind, however, that shell and pipe noises are still another problem. Sometimes the muffler's construction isn't equal to the output of the engine, with the result that there will be tinny sounds known in the trade as pipe "ping." Good muffler construction now calls for wrapping the shell with a sandwich of asbestos. And if the price of the new muffler seems high just remember that it probably has some of these new features. Superior shell construction takes care of the objectionable noise that comes from failure to

[*Continued on page* 163]

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Lost: $300,000,000

[*Continued from page* 63]

his find to the police, a newspaper syndicate followed up with a story, and his life was a nightmare after that. His office became a center for thousands of crank letters from all over the U. S. They included propositions for going into business, requests for donations to strange charities and marriage offers. Friends whom he hadn't seen in years suddenly discovered his existence. His home telephone became a maddening symphony of crazy jangling at all hours of the night. There appeared to be no end to the flood of phonies who, often calling collect from as far away as Florida, tried claiming the money. David, nevertheless, made every effort to find the owner. But no real owner turned up, so the money eventually became his.

But thanks to people like Lumiansky, the next time you lose something—and the odds say that you will, if you haven't already—you can be reasonably sure that it's going to turn up. Most people are honest in spite of the dozens of newspaper stories you read every week concerning official graft, corruption and public dishonesty.

A major New York taxi company, for instance, reports that about 99 per cent of all things lost in its cabs are returned. Last year about 12,000 items—including more than $12,000 in cash—were turned in to the company's lost-and-found department. Close to $2,000 of it was in small change and bills found on floors and under seats.

Every day the nation's major airlines, railroad terminals, shipping companies and bus lines rake thousands of parcels and a fantastic assortment of valuables into their already bulging lost-property departments. A count at one leading bus company last year showed that more than 40,000 parcels had been turned in, even though many were wrapped and the finders could not have known what was inside.

Much lost property cannot be returned simply because there's no way of identifying the owner. So label your valuables clearly and conspicuously with your name and address.

[*Continued on page* 165]

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Squeeze bright, white Tub-Caulk right out of the tube like toothpaste. Caulk around sinks, tubs, and showers quickly and neatly. This amazing new product dries within one hour to a tight waterproof seal that won't shrink or crumble. Tub-Caulk keeps its white satin-smooth finish even after repeated use of harsh scouring powders.

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CHAMPION SPARK PLUGS!

20 VICTORIES IN 23 STARTS

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The record-breaking success of the Hudson Hornet in strictly stock car competition in 1952—as well as in 1951—is a tribute to the handling qualities, ruggedness, dependability and safety in-built in Hudson's step-down design.

The car must be certified as strictly stock and identical with one you can purchase from your local dealer.

Here, as in all racing, Champion Spark Plugs are unchallenged for top performance and dependability. For not only have they been in the winning Hudsons, but in other victorious stock cars in many other events.

All of these cars, regardless of make or year, have used the standard type Champions recommended for that car. Here's solid proof that the Champions for your own car are tops in performance and dependability.

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"CHAMPIONS have been standard equipment on our cars for over twenty years. We know we can depend on them for top performance on the highway and on the track."

HERB THOMAS
1951 Stock Car Racing Champion
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says—

"The Hudson Hornet I drive is equipped with regular stock CHAMPIONS, the same as those sold by your neighborhood garage and service station."

FOLLOW THE EXPERTS

USE THE SPARK PLUG CHAMPIONS USE

Don't Pan The Panfish

[Continued from page 90]

more real angling thrill in taking a one-pound white perch than a five-pound lake trout.

The fisherman who goes after panfish with a heavy bass rod isn't going to get much of a kick out of the sport. The rod to use is a light one, the lightest you can get. I have used a 1½-ounce fairy wand and if you don't think a big sunny will-put up a battle on that kind of tackle, you just don't know him. Of course heavier equipment is needed for the larger species.

In view of the current popularity of fishing, the chances are you will have to make a long trip and put up with crowded waters if you want to confine your angling activities to trout, largemouth or smallmouth bass, big pike or muskies. But you probably can find excellent panfishing close to your back yard and, strangely enough, good fishing is often found right in the park lakes of large cities.

If you happen to have a car-top boat, really wide vistas are opened to you and once you have tried panfishing on light tackle your familiar game-fish waters will attract you less often.

A few years ago I was fishing at Stuart, Florida, and had spent several days taking sailfish, snook, channel bass and husky reef fish. Then I bumped into an angler at the Pelican Hotel who insisted he knew an inland lake that would provide more real fun than all the off-shore fishing between Jacksonville and Miami. He wanted to know if I had brought along a light fly rod as well as an assortment of salt water tackle, and I nodded an affirmative.

"Meet me here in the lobby at seven in the morning and I'll prove my point," he suggested.

The next morning we proceeded to the airport and climbed aboard a small amphibian. An hour later we dropped in on a small lake in the heart of an isolated stretch of palmetto barren. The rods were rigged up and he handed me a small streamer fly. For the next two hours we took more and larger crappies that I thought existed. The action was almost constant and on a 2½-ounce fly rod and a 5-X leader, every fish hooked provided a contest.

"When we get back to Stuart," my host announced, "I'm going to cook some of these fish for you myself and if you ever ate pompano that had a finer flavor and texture I'll eat your left shoe."

I still have my shoe. •

Before you buy . . . be sure to see the sensational

REMINGTON *Wingmaster* MODEL 870

Twin action bars prevent twisting, binding; assure smooth gliding pump stroke. *Exclusive!*

No tools for take-down. Just unscrew magazine cap, lift barrel off. Extra plain barrels need no fitting. *Exclusive!*

Breech block locks into barrel extension — for longer life, constant head space. *Exclusive!*

It's easy to see why Remington "Wingmaster" Model 870 is America's most wanted pump action shotgun. No other gives you such big value, superior quality, exclusive features . . . for such a moderate price.

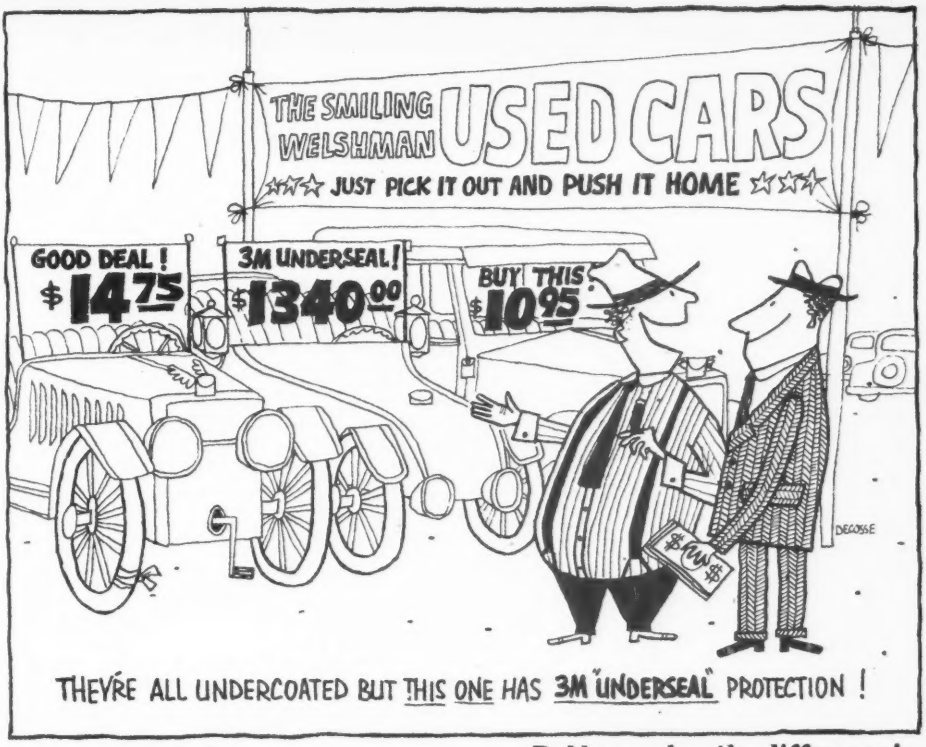
And no other is so adaptable. "Wingmaster" is the *only* shotgun for which you can buy extra plain barrels —*any time*—and combine them with your "Wingmaster" action, *in seconds* . . . with no special fitting!

Your Remington dealer will be glad to show you other "Wingmaster" exclusives, like "Vari-Weight" plug in 12 ga. that gives you two weights in one gun . . . the double action bars that make operation so smooth and positive.

Before you buy, see *all* that's new in the Remington "Wingmaster."

Remington DU PONT

"Wingmaster" is Reg. U. S. Pat. Off. by Remington Arms Company, Inc., Bridgeport 2, Conn.



SEE WHAT HAPPENS when snow, moisture and corrosive road salts attack the vulnerable underbody area of your car! Stop this damage before it starts with 3M "UNDERSEAL"—the brown, *rubberized* undercoating.

3M "UNDERSEAL" provides a tough, resilient, protective underbody blanket that seals out moisture—stays on the job in every kind of weather. Gives your car *full protection* from rust, corrosion, flying stones and gravel. Hushes motor and road noises—gives you "quiet as a cloud" motoring pleasure. See your 3M "UNDERSEAL" Applicator today. Prove it to yourself.

If it isn't "3M" it isn't "UNDERSEAL"

Rubber makes the difference!

(SAND-BLAST TEST PROVES IT)

ORDINARY UNDERCOATINGS wear away under this punishing test—leaving underbody metal exposed to rust and corrosion. This fender metal was coated with ordinary undercoating. Nine passes with the sand-blast gun ripped the coating right off the metal.

3M "UNDERSEAL"—the brown *rubberized* undercoating—protected *this* fender section. THIRTY passes with the sand-blast gun failed to penetrate its tough rubberized cushion! You may have to drive your present car for a long time. *Protect* it now with 3M "UNDERSEAL".

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CITY.....ZONE....STATE.....

Blow Yourself To A Fortune In Natural Gas

[*Continued from page* 146]

What most of the newspaper readers didn't know, however, was that as American citizens, they could have done the same thing on their own for only $30 per 3-year lease.

If you're interested in this angle, you can get the latest information by writing to the Bureau of Land Management, Department of the Interior, Washington 25, D. C., asking for information on non-competitive leases to oil and gas lands.

Some smart operators, taking a tip from the big companies, don't even buy the land on which they want to wildcat for natural gas. They merely lease gas-drilling rights from landowners, offering to pay them a royalty of about 12½ per cent of all income from production if any natural gas is found.

A few years ago, two former oil and gas company drillers bought up the gas rights to 12,000 acres in West Virginia. They drilled wells all over the land but for at least two years were unable to hit anything except dry pockets. About a year ago, they brought in their first well and sold the balance of their gas rights to the Cumberland and Alleghany Gas Company for close to $4,000,000.

Naturally, unless you are a geologist or full-time prospector, you can't be expected to know just where natural gas can be found, even though the experts themselves are not always sure, as Dorcie Calhoun proved. If you have any plans in mind for prospecting, wildcatting or land speculation, you'd better get acquainted with what natural gas is all about. The American Gas Association at 420 Lexington Ave., N. Y. 17, N. Y., will send you on request a booklet called "The Story of Gas," which contains simplified information about natural gas and the type of land in which it is found. If you're interested in more highly technical information on natural gas, a letter addressed to the librarian of the American Gas Association's office will bring you an accurate answer.

For specific information on natural-gas reserves and potential gas lands in your own state, you'll have to do a little more digging around. Undoubtedly the most useful sources of information are the local Public Service Commission, the local U. S. Land Office and the local geological office.

What can you, as a non-professional, do if you own land or gas-lease rights and suspect you have a rich pool of natural gas?

Go high, wide and handsome on the world's best motorcycle!

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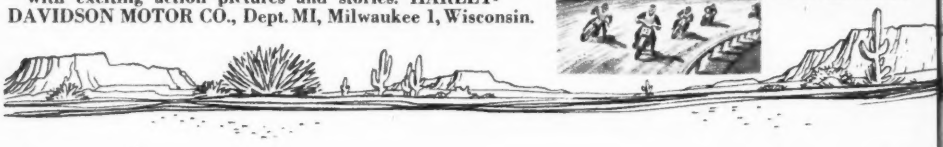
HYDRA-GLIDE®

For the greatest sport in the world, spine-tingling thrills and pleasure-packed adventure, ride a Harley-Davidson. If you've ever broken a frisky colt, or hankered to, you know what we mean. You'll make the dirt fly at field meets, club events and endurance runs. You'll pal with the greatest bunch of red-blooded, fun-loving guys and gals in any sport. Go barreling along over highways and byways. Get going . . . see your dealer and take a buddy along. Or send 25 cents for illustrated literature and a copy of the ENTHUSIAST Magazine, filled with exciting action pictures and stories. HARLEY-DAVIDSON MOTOR CO., Dept. MI, Milwaukee 1, Wisconsin.



For one thing, you can hire the services of a recognized geological survey firm to evaluate your land, learn just where and how much natural gas may be there. This will get you in a position to either start a wildcat well, organize a small company or sell your rights to others.

But one of the best things to do is to get in touch with a major gas company. Don't forget, they are just as eager to find more gas to sell as you are to make a fortune out of a gas discovery. Most of the natural-gas firms have special scouts who do nothing but check into letters containing tips on the location of potential natural-gas reservoirs. Of course, if the tip turns out to be accurate, the company has to bargain for drilling rights or buy the land outright.

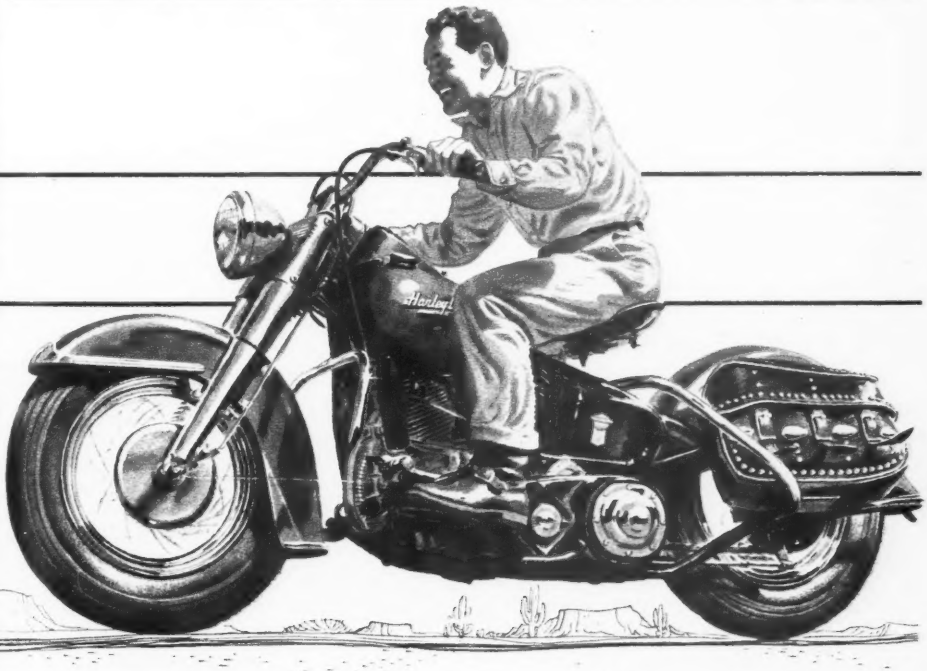
In one of the Appalachian areas, where most companies had given up hope of finding more natural gas, John A. McGuire lined up some partners and bought gas-lease rights from Thomas J. Jentz, a 42-year-old auto mechanic. Jentz got $2,500 for the lease and a one-eighth share of profits.

McGuire and his associates started drilling operations early this year. After sinking about $90,000 into the investment, they were about to abandon the enterprise when the well came in with such a gush of pressure that it set off an explosion and one of the biggest well fires ever seen in the U. S. For several days, the fire burned up an estimated 6,250,000 cubic feet of natural gas—worth more than $10,000—every hour.

But when the fire was finally extinguished, McGuire learned that he had struck what is believed to be the richest natural-gas well ever tapped.

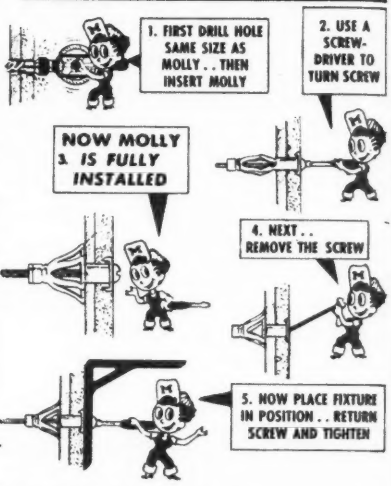
On the basis of present estimates, the investors are expected to get $250 for every 1,000,000 cubic feet of gas from that single well. And it is flowing at the rate of 150,000,000 cubic feet a day. Jentz, the auto mechanic who leased his rights, is expected to earn more than $1,200 a day in royalties for his one-eighth share. John Jazen of Erie, Pa., one of the small investors in McGuire's well, said he guessed that he might collect royalties on his two shares for the next 15 years. Another investor said his share, which cost him $100, is estimated to net dividends at the rate of $50 a week.

So, look carefully at that "useless" land in your own backyard and make certain that those supposedly valueless acres in your part of the country are really valueless. They're certainly worth a second look—discover a natural-gas field and you'll really blow yourself to a fortune. •



"WHERE SCREWS WON'T HOLD!" USE

MOLLY SCREW ANCHORS



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Fasten: Towel Bars, Soap Dishes, Cabinets, Clocks, Mirrors, Shelving, Venetian Blinds, or any wall mounted fixture.

Write for free descriptive folder

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Print Your Own

Cards, Stationery, Advertising, Circulars, labels, photo and movie titles, church work, tags, etc. Save money. Sold direct from factory only. Raised printing like engraving, too.

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"YANKEE" VISES

You line up work just once in a "Yankee" Vise, then follow through with every operation. Used with swivel base on bench for hand work, quickly removed from base for machine work. Its two-in-one use-value makes it popular in home shops. Four jaw widths: 1½", 2", 2¾" and 4".

Get FREE "Yankee" Tool Book. North Bros. Mfg. Co., Dept. 2, W. Lehigh Ave., Philadelphia 33, Pa.

"YANKEE" TOOLS NOW PART OF STANLEY THE TOOL BOX OF THE WORLD
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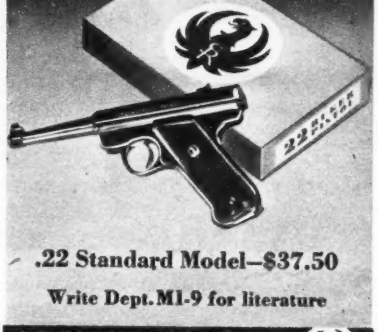
NORTH BROS. MFG. CO., Philadelphia 33, Pa.

RUGER

AUTOMATIC PISTOLS



.22 Standard Model—$37.50

Write Dept. M1-9 for literature

STURM, RUGER & CO., INC.
SOUTHPORT, CONNECTICUT

Car Care

[*Continued from page* 154]

provide for vibration damping. Ends of the muffler are vulnerable spots. That is where "head ring" noise so often develops. Contour changes help check this quite as much as head construction. That whistling sound from the exhaust can be checked by the correct type of muffler. Mufflers sold by Chrysler, Dodge, Plymouth and De Soto dealers check the whistle at all speeds by means of slotted tubes. The openings are at right angles to the length of the tubes and look like hack saw cuts.

If the flooring of the car is always uncomfortably hot use of an asbestos treated muffler may solve the problem. Asbestos insulation also helps check rotting from excessive condensation. A superior muffler is designed to resist destruction from backfire resulting from ignition of accumulated gas vapor. It is important that the replacement muffler be of a type that will continue giving good results and not something that may easily clog.

Many muffler manufacturers cater to the car owner's desire for a deep, mellow exhaust tone. •

Auto Bug's Night Light

[*Continued from page* 137]

the cobbled street and the curb dark grey. The sidewalk should be somewhat lighter.

Upper portion of the lamp is made of sheet metal. Aluminum, brass, or copper serve equally well. In forming the bulb frame, you'll only have one seam, which is held firmly with masking tape. Be sure to flange the bottom of the frame so that it can be bolted to the square platform. Latter is cut to shape with a hack saw, and a ½-in. hole drilled in its center. The post is ½-in. outside diameter material, either wood or metal, with a hole through it large enough to accept the wire.

Post is press-fitted into the base and platform, and the lamp is fastened with a screw. Attach a small wooden ball to the top of the lamp cover with rubber cement. Post crossbar is ⅛-in. tubing press-fitted in place. Two hat pins serve as ball ends.

Wire the socket, then apply two coats of lampblack. A No. 10-32 machine bolt fastens the lamp to the base. Sanded celluloid cemented in place offers a frosted glass effect. Install a 6-watt, 125-volt bulb in the socket, and that's it.

If desired, cement a piece of felt under the base to protect the furniture surfaces.

—*Paul Palanek* •

—yours with these Wizards with Wood

Making something that needs finishing? Mending something that needs gluing? If it's made of wood ask for Firzite, Satinlac and Weldwood Glue. At hardware, paint and lumber dealers—or mail coupon for leaflets.

The Wood Glue you can rely on!

To make things or fix things, use Weldwood Glue for all wood-to-wood bonds. Makes joints stronger than the wood itself. Mixes easily with water. Stain-free, rot-proof...highly water-resistant!

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PLASTIC RESIN GLUE

Gets that blond or pickled effect—

Produces those magical "woodsy" effects—on hard wood or soft, plywood or solid lumber. For light pastel tones, tint White Firzite with Colors-in-Oil. (On fir plywood stain jobs, tame that wild grain with Clear Firzite.)

WHITE FIRZITE*

Gets that Natural-Wood Finish

—without shellac or varnish. On furniture, panelling or woodwork, there's nothing like Satinlac. Brings out natural grain and color beauty of any plywood or solid wood. Avoids that "built-up look; will not turn yellow or darken with age. "Water-clear," easy to brush or spray, dries ready for next coat in 2 or 3 hours.

Pints, Quarts, Gallons

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SATINLAC*

United States Plywood Corporation,
Dept. 190, 55 West 44th St., New York 36, N. Y.
Send me free leaflets on Weldwood Glue, Firzite and Satinlac.

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make your *HANDS* *MORE CREATIVE* with x-acto Knives and Tools

X-acto precision knives and tools give untrained hands the confidence that makes them creative.

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Send 15c to cover postage for our new illustrated 28-page Catalog.

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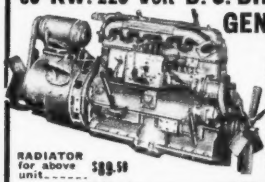
65 KW. 225 Volt D. C. DIESEL ELECTRIC GENERATING UNIT



RECONDITIONED

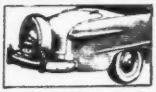
Equipped with 6 cyl. DRXC Hercules DIESEL engine. 4⅝" bore, 5¼" stroke. 133 H.P. at 2000 R.P.M. Complete with injector pump, nozzles and electrical equipment. Generator attached to engine. Complete as shown.

Ea. $1375.00 Lots of 2 ea. ------- **$1295.00**

RADIATOR for above unit------ $88.50

Write for price on DIESEL ENGINE only.

$125.00 Val. "CONTINENTAL" SPARE TIRE KIT



Creates Smart, Swanky, Sweeping Style! Increase Luggage Space 25%. This assembly becomes an integral part of the body. Kit is complete with: Gravel Pan, Tire Cover, Chrome Welt, License Light, and parts for easy installation.

For 49-51 Fords **$59.50** | For 49-52 Chevrolet **$69.50**

SEND 25% CASH WITH ALL ORDERS, BALANCE C.O.D.

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Get World's Largest Auto Accessory & Parts Catalog and Save Money. Over 50,000 items including Hollywood Accessories, Hi-Speed Equipment, Rebuilt Engines, all parts & accessories for all cars & trucks. We have that Hard-to-Get Part. 100 pages illustrated. Send 25c (refundable).

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WORLD'S LOWEST PRICED 2 PASSENGER AUTO

Drive it for 75c per week. Amazing performance. Surprising comfort. All steel construction. Ready to run or assemble it yourself with our bolt together parts. Rider agents wanted, earn your car Free. Send 25c for detailed literature or $1 (refunded first order) for actual assembly book and service manual filled with photos, drawings, specifications, etc.

MIDGET MOTORS MFG. CO. ATHENS, OHIO

DRAINS Cellars, Laundry Tubs; CIRCULATES Oil; IRRIGATES Gardens

Original "Type P" Pump has 2400 GPH capacity. 360 GPH 75' high, or 1500 GPH for 25' well. Use any ⅛ to ½ HP motor. DOES NOT CLOG. 1" intake; ¾" outlet.

Only $6.95 postpaid if cash with order.
MOTOR COUPLING INCLUDED
(West of Mississippi, add 50c.)

SATISFACTION GUARANTEED OR MONEY BACK!
Also Gear Pumps in all sizes.

$6.95

LABAWCO PUMPS, BELLE MEAD 30, N. J.

Don't stir paint

2-minute shake-up in your dealer's Red Devil Paint Conditioner makes paint ready to use—fresher than fresh. Buy where you see this machine.

Red Devil Tools
IRVINGTON 11, N. J., U. S. A.

Lost: $300,000,000

[*Continued from page* 156]

Anyhow, here are four very definite rules the experts say you ought to follow when you lose something and want it back:

1. *Don't get excited.* Keep cool and try to recall every single detail of your steps from the time you know you've lost something to the time you remember seeing it last. Then, begin your search. But keep it systematic.

A passenger on a commuter's train in New Jersey last winter accidentally let his $2,500 diamond ring slip through the wash basin drain when he went to the bathroom to clean up. Quickly he looked at his watch. Then he notified the conductor. When the train pulled into the next station, the conductor got in touch with the central office. A crew was sent out. Figuring the rate of speed of the train, the time it left the last station and the time the passenger gave as the moment he lost his ring, the crew had no trouble in going exactly to the point where the ring lay alongside the tracks in a snowbank.

2. *As soon as possible, make a full report to lost-and-found officials or to the police.* Practically every police department throughout the country has a lost-and-found clerk whose sole job it is to catalogue lost property and get it returned speedily to its owner.

3. *Don't confine your search to one spot only.* Human memory is tricky. If possible, always spread your search around a wide area.

4. *Advertise your loss through newspaper classified columns and offer some kind of reward.* This is one of the most popular techniques followed by insurance companies and individuals who lose property of great sentimental value or high dollar worth.

A glance through newspaper advertising on any one day would be enough to convince you of the odd things people can lose. In the *New York Times* a man once advertised for the return of a lost 19-foot dinghy, another for five Balinese prints in a bamboo cylinder.

If you advertise and offer a reward, stick to your word. You can be sued if you don't. You might also suffer embarrassment. The latter happened not long ago to a well known St. Louis businessman who lost $10,000 and offered, through his newspaper ad, " a liberal reward for its return." The money was promptly returned. Several days later, however, the finder took an ad in the same newspaper. Addressing himself to the loser's full name and address, the finder's ad said ". . . who advertised a liberal reward for the return of $10,000 . . . may God bless you and guide you in the use of the remaining $9,990."

According to leading lost-and-found in-

[*Continued on page* 169]

Neither Can You Judge the Safety of a Tire By Its Outside Appearance

Your BOWES Dealer Is Equipped for Complete Inspection

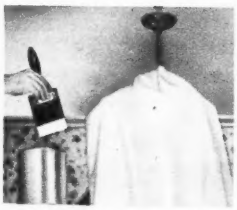
The Bowes "Seal Fast" dealer is a trained tire repairman. He has the most modern equipment for the job. He will quickly and efficiently check your tires inside and out for hidden breaks that cause blowouts, small holes that gather dirt and water, resulting in tire rot. Any necessary repairs will be made by the sure, dependable Bowes method. Remember, you can't judge an egg by its shell. Insist on *inside* and *out* inspection—save tires and, perhaps, YOUR LIFE. See your Bowes tire repairman NOW—and be sure.

DRIVE IN WHERE YOU SEE THIS EMBLEM

BOWES SEAL FAST

BOWES "SEAL FAST" CORP., INDIANAPOLIS 7, INDIANA

Pointers for Home Painters Ceilings:



Before painting, loosen base plate of lighting fixtures—drape with small cloth to prevent splattering. Don't overload brush with paint.

Stand on plank across two ladders. Start in corner. Dip brush to one inch. Raise quickly. Use short, light strokes. Paint in areas about four feet square.

Use a commercial hand protector, for quick cleaning of hands when job is done. Remove stubborn paint with thinner. Wash with soap.

For storage, clean brush thoroughly with thinner. Then scrub bristles with warm water and cleaner. Rinse in clear water, comb bristles and wrap in paper and store.

JOB AFTER JOB you'll get best results with a well-tipped nylon paint brush. Durable Du Pont nylon bristles paint smoother . . . are clean and sanitary . . . never get brittle . . . don't break off even under the roughest treatment. And nylon bristles last from 3 to 5 times longer than ordinary bristles. Leading manufacturers make nylon paint brushes in all types and sizes. Look for the name NYLON on the handle. Be sure to pick the size brush designed for the job . . . and demand Du Pont nylon bristles.

150th Anniversary

DU PONT
REG. U.S. PAT. OFF.

Better Things for Better Living
. . . through Chemistry

The best brushes have
DU PONT NYLON BRISTLES

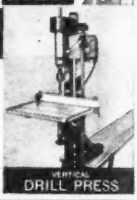
RETAIL PRICE $125.00

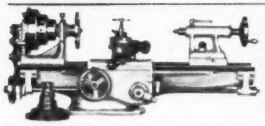
FACTORY TO YOU $79.95

SUPERSHOP is a PRECISION-BUILT WORKSHOP. 100% ball bearing. **All** running parts precision **ground.** Big capacity. Extra rugged. Amazing **value. Write for FREE catalog.**

BUY ON EASY PAYMENTS

POWER TOOLS, INC. 639 Yates Avenue Beloit, Wisconsin





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Catalog with complete construction drawings of this 8 inch Modelmaker screw cutting lathe with milling, grinding and hand shaper attachments, 25 cents postpaid, or send one dollar for drawings of three lathes, three milling machines and six inch crank shaper. Refund on castings order.

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BUILD YOUR OWN ARC·WELDER NO REWINDING NECESSARY

For Light or Heavy Work

We show you how to build this NEW Powerful welder without rewinding. Uses coils taken from old auto generator. Has 20 heats. Operates on either 110 or 220 volts A. C. Learn to weld. Make money welding for others. Complete plan and valuable catalog 35c.

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BIG MONEY IN OWN BUSINESS

YOU CAN MAKE UP TO $40 a DAY sharpening and setting circular saws for factories, builders, lumber yards—with NEW BELSAW COMPLETE CIRCULAR SAW SHOP. **Low Cost, only $15 down,** sharpens 4 to 5 saws an hour. *No experience needed!* Instructions Furnished. Send Postcard Today for FREE BOOK. ▶

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More than 800 scale models listed!
More than 200 illustrations!
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Get EASY STARTING ... Smoother Engine Performance ... Save Gas! with SENSATIONAL NEW SISSON Electrimatic CHOKE

Positive, dependable *electric choking* gives *quick, easy starts* every time in any weather. Smoother warm-up ... no stalling ...no flooding...no seasonal adjustment! Fits any car equipped for automatic choking. $5 complete.

INSTALL IT YOURSELF Get FREE Illustrated Folder

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Car Make_____ Year_____ Cyl._____
Carburetor Make_____
Name_____
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City_____ Zone____ State_____

A RULE WITH 1,000 USES!

the SPORT by MASTER

We will guarantee the new "SPORT" to be the finest rule ever designed, in its price range. Examine its beautifully fashioned, rugged die-cast case. Take a look at the snow white triple coated finish of the superb "Brite Blade." Test the extra long double riveted tip. Examine the quality and sharpness of the printing on all figures and graduations. We know when you've finished you'll be amazed at the low, low price of 98c (6 ft.), 8 ft. 1.19, 10 ft. 1.39.

Ask for the SPORT today at your favorite hardware store.

MASTER
MASTER RULE MFG. CO. INC. Middletown New York
WOOD AND STEEL TAPE RULES

Starrett

FRICTION THIMBLE* MICROMETERS

Give You

- UNIFORM PRESSURE
- UNIFORM READINGS

Every Time

Starrett Satin Chrome Micrometer No. 231-F Range 0-1" by .0001", shown above. Friction Thimbles also available in other sizes and styles.

*An improved friction stop mechanism built right into the thimble permits easy, one-hand operation — insures uniform contact pressure for every measurement. You get the same sure accuracy every time ... plus 12 other big Starrett features including Satin Chrome Finish, Tapered Frame, Hardened Threads ground from the solid and stabilized and Hi-Micro Mirror-Lapped Finish on contact faces. See it at your Starrett Tool Distributor's.

SEND FOR IT — ONLY 10¢
Starrett "Tools and Rules" Book shows the right tools for any measuring job. 50 pages, 100 pictures, helpful reference tables. Address Dept. MX

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TRADE MARK Starrett REG. U.S. PAT. OFF.
STARRETT TOOLS
Buy THROUGH YOUR INDUSTRIAL DISTRIBUTOR
• Prompt delivery • Dependable service • Quality products
SINCE 1880
WORLD'S GREATEST TOOLMAKERS

MECHANICS' HAND MEASURING TOOLS AND PRECISION INSTRUMENTS
DIAL INDICATORS • STEEL TAPES • PRECISION GROUND FLAT STOCK
HACKSAWS, BAND SAWS and BAND KNIVES

ONLY *Marlin* LEVER-ACTIONS MOUNT 'SCOPES SO LOW!

Marlin Low Central 'Scope Mounting

1. Flat Top for Firmer Mounting
2. Low Hammer Spur
3. Side Ejection

● The closer your 'scope to the barrel, the easier your aim. And no other lever-action gun lets you mount a 'scope so low on center as a Marlin.

See the many new Marlins at your dealer's. Many Marlin dealers have a handy lay-away plan. Ask about it.

MODEL 336-30/30C CARBINE (far left)—has new Marlin super-strength breech bolt mechanism, Ballard type rifling. **$68.95***.

MODEL 39A .22 REPEATER (left)—the world's best all-around .22 and America's only lever-action .22 repeater. **$60.85***.

THE NAME FOR GAME

Marlin

FINE GUNS SINCE 1870

*Prices subject to change without notice. Slightly higher west of Rockies. Marlin Guns and Razor Blades sold in U. S. and Canada.

VALUABLE COUPON—MAIL TODAY

The Marlin Firearms Co., Dept. 9-M, New Haven, Conn.

Please send me your catalogue with full information and photo-illustrations of Marlin Guns, plus new cartoon book, "More Fun With Your .22 Rifle." I understand you will also send me a pack of (please check preference) ..... single or ..... new double-edge *Magnetized* Marlin Razor Blades. I enclose 10¢ for handling.

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ADDRESS _____

CITY _____ ZONE _____

STATE _____

NOW—40 different CUTS with AMAZING, NEW *Warren* DADO SAWING WASHERS *On Your Saw Blade*

Just dial widths to cut parallel grooves perfectly smooth. No warp, vibration or trick screws. Strengthens blade, perfect balance. GUARANTEED! At your dealer's or order direct. Give arbor size—½", ⅝", ¾", 1".

ONLY $4.95 PER SET

WARREN WASHERS COMPANY

DEPT. 229, BOX 98 NORTH END STATION, DETROIT, MICH.

DON'T RISK PAINT FAILURE

Get Free Book! No need for poor paint results. Fact-filled book, written by experts, tells what aluminum paint to use inside and out, on metal, masonry and wood. Costs you nothing, can save you dollars. Write for "Paint it Bright."

Aluminum Company of America, 1719-J Gulf Bldg., Pittsburgh 19, Pa.

MARVEL *Mystery Oil*

- Frees Sticky Valves
- Stops Hydraulic Valve Clatter

Buy it at your favorite gas station

When Answering Advertisements Please Mention **MECHANIX ILLUSTRATED**

Precision Saw

No other 8" circular saw has 5-in-1 SHOPSMITH's unique blade-to-fence adjustment, its big table area. Converts to lathe, sander, vertical and horizontal drill press. Write for free catalog.

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12819 Coit Rd., Cleveland 8, O.

CARLSON **BIG CHIEF**

MEASURES 10 FEET UP *Without Buckling*

¾" WIDE WHITE BLADE

- Double graduations feet and inches
- Ten second blade change
- Easy-action swing-tip
- Easy-to-read crackproof white face
- Built-in automatic brake

Produced under patents 2089209, 2510939

Carlson & Sullivan, Inc. MONROVIA, CALIF.

Lost: $300,000,000

[*Continued from page* 165]

surance experts, more than $150,000,000 in rewards is offered every year for the return of lost property. Close to 80 per cent of it is collected, too.

You don't have to offer cash, though. You can offer any kind of reward you please. At a U. S. Air Force base on Long Island, the local newspaper once carried this ad: "Will the person who came to Chapel on Friday evening to meditate and pray, and who got so deep in meditation that he took off with the chaplain's trench coat, please return same? The reward will be great—in heaven!"

But being smart-alecky doesn't always help. In Grand Rapids, Mich., last February, this ad was placed: "The man who picked up my wallet was recognized; he is requested to return it."

Next day there was an answer in the same column. "The recognized man who picked up your wallet requests you to call and get it."

Travelers are the most notorious losers. Major airlines say that passengers lose an average of five valuables each flight. One shipping line says its passengers lose more than 100 items on each ocean crossing and nearly three times as many when the ship docks. New York's two leading railroad terminals, Pennsylvania Station and Grand Central, report an average of 150 pieces of property mislaid daily.

When Mrs. John Gillingham lost her purse at a New Year's party at the Eagles Club in Menasha, Wisc., she thought she had said goodbye forever to the $500 it contained. But a few days later, a package wrapped in brown paper arrived at the club from Appleton, Wisc. It contained Mrs. Gillingham's purse. But instead of $500, the purse came back with $1,800! Nobody could explain.

So, remember! If you've got anything you value, hang on to it. But if it does get lost, don't write it off for good. Experience has proven that there's enough honesty around to put the odds in your favor for its eventual return. •

Supersonic Bail-Out

[*Continued from page* 59]

handle which retracts his seat into the capsule. This also releases the escape hatch and arms the catapult. When doors are closed the catapult is fired and the capsule is ejected. Time delay switch releases the parachute automatically and this is detached in turn when the capsule strikes the ground or water. Capsule will float although made of armor plating and laminated Fiberglas skins and cores. •

BE YOUR OWN BOSS! Men who are determined to get ahead in something for themselves will find this opportunity hard to beat! Where else can a man turn his own labor so quickly and easily into BIG MONEY! Earn as high as $50 and more a day sanding floors with an easy-to-run American Machine—and YOU ARE BOSS. Prospects everywhere—old and new homes and remodeling. Pleasant indoor work—steady the year round. No schooling — no experience needed. Age makes no difference—men 18 to 80 are active and successful. Send coupon for "money-making" booklet entitled "Opportunities in Floor Surfacing"—enclose 25c in coin or stamps to cover handling.

AMERICAN
FLOOR MACHINES

SEND

The American Floor Surfacing Machine Co.
531 So. St. Clair St.
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Enclosed find 25c in stamps or coin for booklet "Opportunities in Floor Surfacing", telling me how I can start my own floor sanding business.

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When Screws Won't Stay TIGHT. Use SMOOTH-ON

Apply Smooth-On No. 1 Iron Cement to screw threads and into the screw hole. Insert and tighten up the screw. It will take hold and, when set, will STAY TIGHT, for Smooth-On expands slightly as it hardens, wedging the screw in place. This is only one small use for this general-purpose iron cement. With it you can stop leaks and seal cracks in cast metal parts, tighten loose knobs, casters, tool and utensil handles, make many auto repairs. Buy it in 1¾-oz., 7-oz., 1-lb. or larger size at your hardware store. If they haven't Smooth-On, write us.

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Many original uses for Smooth-On around the house, on the car, etc. Simple directions. 170 illustrations. Send postcard for YOUR free copy.

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Do it with

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THE IRON REPAIR CEMENT OF MANY USES

Made $900 IN SPARE TIME

"I did very well last year with my Foley equipment, about 950 saws in my spare time. About $900 for me." Leo H. Mix, New York.

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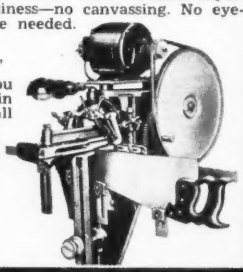
FREE BOOK—"MONEY MAKING FACTS" shows just how you can start at home in spare time, with small investment, no overhead—and develop into a full-time repair shop. Send coupon today—no salesman will call.



Send Coupon for FREE BOOK

Foley Mfg. Co., 915-2 Foley Bldg., Minneapolis 18, Minn.
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Address .....

ELMER'S wonderful!

ELMER'S *Glue-All* is wonderful for mending and making so many things. It's **white magic** for strong, invisible gluing of: *furniture, wood, paper, fabric, pottery, leather, linoleum,* etc. Dries in a jiffy! Wonderful for kids because it washes off hands and clothing instantly. Non-staining—and so pleasant and easy to work with. Get a trial-size bottle of ELMER'S *Glue-All* today—another *Borden's* product that belongs in your home.

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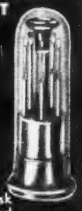

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SHARK BRAND Paring Chisels are designed for professional use—the first choice of cabinet makers and hobbyists who want fine workmanship. Extra wide bevel, hardened and tempered for two-thirds of the length of the blade. Perfect balance . . . available with either Curly Birch Root or tough, plastic handles.

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11.50 with all GAGES & 4" "HYCARBON" Crosscut Blade.

CAN BE USED WITH ONE HAND!

"ARCO-SAW" works like a high priced Portable Saw. RIGHT ANGLE GEAR DRIVE eliminates clumsy, dangerous direct drive with drill sideways.

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Snap-on*
BRINGS YOU THE NEW
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This 110-115 volt AC-DC iron goes to work *fast!* Pressing the button shoots a booster charge of 100 watts within the tip—brings it to soldering temperature in just 40 seconds! Then, only 25 watts maintain normal tip temperature comparable to conventional irons drawing 100 watts. For heavier soldering jobs, full current is always available by pressing the button.

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I enclose check (or money order) for $7.75. Send me postpaid one Vari-Hot Soldering Iron.

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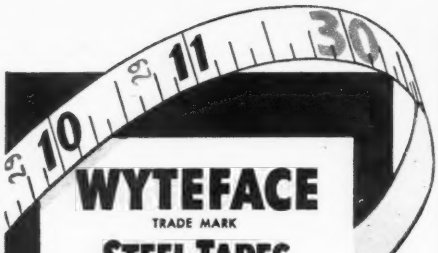

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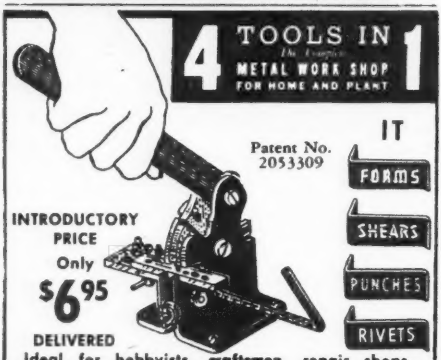

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MICROSCOPE $29.95 Ppd.

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At last! The FIRST instrument with this range of performance ever offered under $125. Every feature needed for advanced university, pre-med and medical school use. Triple revolving turret containing 10X, 20X and 40X achromatic objective lenses. Achromatic condenser, 6-aperture revolving iris. Two-side plano and concave substage mirrors. Solid base, excellent precision construction. Complete with fitted hardwood case. With 15X eyepiece (giving 150X, 300X & 600X) less mechanical stage.

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For above model #635 microscope. 4X, 5X, 8X, 12X interchangeable eyepieces in hardwood case, giving a total in all of 15 different powers from 40X to 600X. Complete set of 4 in case.

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Shown on model #635 microscope. Made only for this instrument. This is an optional accessory which allows you to move the slide microscopically right, left, up or down without touching slide. This calibrated stage cannot be duplicated for less than $45 (If microscope is ordered without mechanical stage, we will fit your instrument with fine spring steel, clip-type slide holders.) Shipped in fitted hardwood case.

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$8.95 no tax

UNITED BINOCULAR CO.

9043 S. Western Ave. Dept. ARF-773 Chicago, 20

Telescope Maker's Page

[*Continued from page* 138]

originally the winding crank. This turns about one revolution every four minutes.

Underneath the declination circle is a brass disk which is shrunk to the declination housing. A brake arm presses against this disk and is linked to the 'scope cradle. A hand wheel in front of the cradle locks the brake.

The base consists of a 3 in. pipe flange bolted to a double thickness of ¾ in. plywood. Two 10 in. wheels and the rubber caster shown, make the unit fairly portable. An added refinement consists of two spirit levels mounted on the 3 in. pipe.

The polar axis Y fits into a 3 in. pipe. Both axes, declination and polar, are pressed on one inch cold roll steel shaft which turns on one inch I. D. sealed ball bearings. The cost of the bearings and the shaft amounted to $8.00. The other parts required were scrounged from a scrap heap. All in all, about four months of pleasant spare time were spent in machining the castings and fitting the parts. •

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POWERFUL TELESCOPE $7.00

complete with tripod, brings images of distant objects 13 times nearer and 150 times larger. Free literature tells how to measure exact magnifying power of any telescope.

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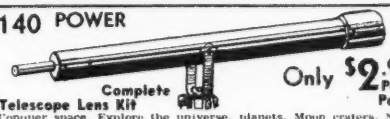

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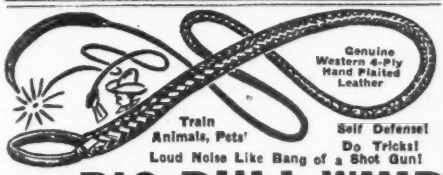

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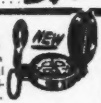

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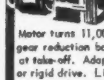

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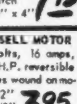

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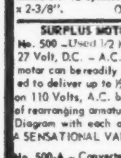

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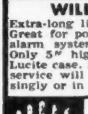

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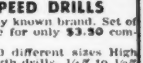

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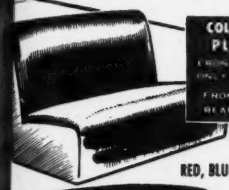

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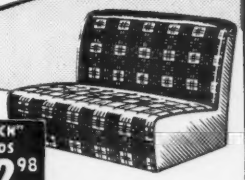

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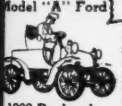

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